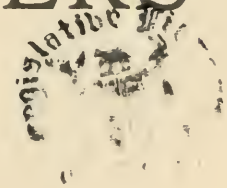
Government
Publications

31292

SESSIONAL PAPERS



VOL. XLVI.—PART V.

31292

THIRD SESSION

OF THE

THIRTEENTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO

SESSION 1914

TORONTO:
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No. 2 Estimates—Supplementary, for the service of the Province for the year ending 31st October, 1913-14. Presented to the Legislature, 27th February and 9th April, 1914. *Printed.* Estimates for the year ending 31st October, 1915. Presented to the Legislature, April 21st, 1914. *Printed.*

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No. 4 Report of the Bureau of Mines for the year 1913. Presented to the Legislature, April 1st, 1914. *Printed.*

No. 5 Report of the Inspector of Division Courts for the year 1913. Presented to the Legislature, March 11th, 1914. *Printed.*

No. 6 Report of the Inspector of Legal Offices for the year 1913. Presented to the Legislature, April 1st, 1914. *Printed.*

No. 7 Report of the Inspector of Registry Offices for the year 1913. Presented to the Legislature, April 17th, 1914. *Printed.*

No. 8 Report of the Provincial Municipal Auditor for the year 1913. Presented to the Legislature, April 16th, 1914. *Printed.*

No. 9 Report of the Commissioners for the Queen Victoria Niagara Falls Park for the year 1913. Presented to the Legislature, April 15th, 1914. *Printed.*

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No. 10 Report of the Department of Insurance for the year 1913. Presented to the Legislature, March 20th, 1914. *Printed.*

No. 11 Report of the Registrar of Friendly Societies for the year 1914. Presented to the Legislature, March 20th, 1914. *Printed.*

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No. 12 Loan Corporations Statements made by Building Societies, Loan Companies, Loaning Land and Trust Companies for the year 1913. Presented to the Legislature, March 20th, 1914. *Printed.*

No. 13 Report of the Department of Public Works for the year 1913. Presented to the Legislature, March 11th, 1913. *Printed.*

No. 14 Report of the Game and Fisheries Department for the year 1913. Presented to the Legislature, February 27th, 1914. *Printed.*

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No. 18 Report of the University of Toronto Board of Governors for the year ending 30th June, 1913. Presented to the Legislature, March 18th, 1914. *Printed.*

No. 19 Report of the Secretary and Registrar of the Province for the year 1913. Presented to the Legislature, April 15th, 1914. *Printed.*

No. 20 Report of the Registrar-General upon Births, Marriages and Deaths for the year 1913. Presented to the Legislature, March 27th, 1913. *Printed.*

No. 21 Report of the Provincial Board of Health for the year 1913. Presented to the Legislature, March 16th, 1914. *Printed.*

No. 21*a* Special Report of the Provincial Board of Health on the work of the District Officers of Health for the year 1912-13. Presented to the Legislature, March 6th, 1914. *Printed.*

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No. 22 Report upon the Hospitals for the Insane for the year 1913. Presented to the Legislature, April 21st, 1914. *Printed.*

No. 23 Report upon the Hospitals for Idiots and Epileptics at Orillia and Woodstock for the year 1913. Presented to the Legislature, April 28th, 1914. *Printed.*

No. 24 Report upon the Feeble-minded of the Province for the year 1913. Presented to the Legislature, April 23rd, 1914. *Printed.*

No. 25 Report upon the Hospitals and Charities for the year 1913. Presented to the Legislature, April 14th, 1914. *Printed.*

No. 26 Report upon the Prisons and Reformatories of the Province for the year 1913. Presented to the Legislature, April 21st, 1914. *Printed.*

No. 27 Report on Neglected and Dependent Children for the year 1913. Presented to the Legislature, April 15th, 1914. *Printed.*

No. 28 Report upon the operation of the Liquor License Acts, Ontario, for the year 1913. Presented to the Legislature, February 27th, 1914. *Printed.*

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No. 31 Report of the Veterinary College for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 32 Report of the Agricultural and Experimental Union for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 33 The Fruits of Ontario. Presented to the Legislature, April 9th, 1914. *Printed.*

No. 34 Report of the Vegetable Growers' Association for the year 1913. Presented to the Legislature, April 16th, 1914. *Printed.*

No. 35 Report of the Corn Growers' Association for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 36 Report of the Entomological Society for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

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No. 37 Report of the Bee-Keepers' Association for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

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No. 39 Report of the Live Stock Associations for the year 1913. Presented to the Legislature, March 3rd, 1914. *Printed.*

No. 40 Report of the Farmer's Institutes for the year 1913. Presented to the Legislature, April 9th, 1914. *Printed.*

No. 41 Report of the Women's Institutes for the year 1913. Presented to the Legislature, April 9th, 1914. *Printed.*

No. 42 Report of the Agricultural Societies of the Province for the year 1913. Presented to the Legislature, April 9th, 1914. *Printed.*

No. 43 Report of the Horticultural Societies of the Province for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 44 Report of the Fruit Growers' Association for the year 1913. Presented to the Legislature, April 22nd, 1914. *Printed.*

No. 45 Report of the Bureau of Industries for the year 1913. Presented to the Legislature, April 23rd, 1914. *Printed.*

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No. 47 Report of the Timiskaming and Northern Ontario Railway Commission for the year 1913. Presented to the Legislature, March 23rd, 1914. *Printed.*

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No. 50 Return from the Records of the Bye-elections held on the second day of June, the fourteenth day of July, the eighth day of September, and the twenty-seventh day of November, 1913. Presented to the Legislature, February 18th, 1914. *Printed.*

No. 51 Report of the Provincial Archivist for the year 1913. Presented to the Legislature, April 15th, 1914. *Printed.*

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No. 52 Report upon the state of the Library. Presented to the Legislature, April 23rd, 1914. *Not Printed.*

No. 53 Final Report of Commissioner on Laws relating to the Liability of Employers to make Compensation to their Employees. Presented to the Legislature, March 27th, 1914. *Printed.*

No. 54 Statements of Provincial Auditor for the year 1912-13. Presented to the Legislature, March 19th, 1914. *Printed.*

No. 55 Copies of Orders-in-Council and Regulations under section 27 of the Department of Education Act. Presented to the Legislature, February 25th, 1914. *Printed.*

No. 56 Bulletin of the Ontario Hospitals for the Insane. Presented to the Legislature, February 27th, 1914. *Printed.*

No. 57 Regulations respecting Rondeau Provincial Park, 1913. Presented to the Legislature, February 27th, 1914. *Printed.*

No. 58 Return to an Order of the House of the 27th March, 1913, for a Return showing:—1. Copies of all correspondence between the Minister of Public Works or any other member of the Government or any official thereof, and any person or persons relating to the floods on the Grand River or any other river in the Province during the years 1908, 1909, 1910, 1911, 1912. 2. Copies of all petitions received during the said years by the Government or any Minister of the Government from any person or persons relating to the floods on the Grand River or any other river in the Province, or requesting the Government to take action towards the prevention of floods. 3. Copies of all reports made by any engineer or engineers employed on behalf of the Government or on behalf of the Hydro-Electric Power Commission, for the purpose of investigating the floods on the Grand River or any other river in the Province, or the means of preventing or mitigating such floods or of conserving and regulating the flow of such rivers or investigating the electrical power potentialities of such rivers. Presented to the Legislature, February 27th, 1914. Mr. *Marshall.* *Not Printed.*

No. 59 Return to an Order of the House of the 22nd April, 1913, for a Return showing:—Copies of all correspondence between the Attorney-General or any other member of the Government or any official of the Government and any other person or persons relating to:—1. The prosecution of one Goodman, formerly Chief of Police at New Liskeard on November 12th last, for an offence against the Game Laws. 2. The conduct of one McKelvie, an overseer of the Game and Fisheries Department at

New Liskeard, Ont., or the dismissal of the said McKelvie from his position. 3. The prosecution of one Eli Tibbs in November, 1912, for illegal possession of furs. 4. The prosecution of any party or parties for illegal possession of furs seized by the said McKelvie from one Angus Wabi. Presented to the Legislature, February 27th, 1914. Mr. *Elliott.* *Not Printed.*

No. 60 A Return to an Order of the House of the 15th April, 1913, for a Return showing:—1. In detail the persons to whom the sum of $19,946.18, appearing an page 323 of the Public Accounts, 1912, was advanced by N. B. Colcock, and the purposes for which the same was advanced. 2. In detail the persons to whom the sum of $11,060.85, appearing on page 372 of the Public Accounts was paid by N. B. Colcock, and the purposes for which the same was paid. Presented to the Legislature, March 3rd, 1914. Mr. *Anderson (Bruce).* *Not Printed.*

No. 61 Copies of Orders-in-Council authorizing payments out of Surrogate of the Counties of York and Simcoe in accordance with the provisions of the Surrogate Courts Act. Presented to the Legislature, March 10th, 1914. *Not Printed.*

No. 62 Return to an Order of the House of the 11th March, 1913, for a Return showing for what Municipalities was the Report of the Lieutenant-Governor in Council in favour of, or against, building an electric railway for such Municipalities. Presented to the Legislature, March 16th, 1914. Mr. *Elliott.* *Printed.*

No. 63 Copies of Orders in Council in accordance with the provisions of sec. 2, cap. 2, 2 George V, An Act for raising money on the Credit of the Consolidated Revenue Fund of Ontario. Presented to the Legislature, March 16th, 1914. *Not Printed.*

No. 64 Return to an Order of the House of the 2nd March, 1914, for a Return showing:—1. What securities have been sold by the Province since October 31st, 1912. 2. What was the date of the sales. 3. What are the names of the purchasers. 4. What are the prices at which such securities were sold. Presented to the Legislature, March 16th, 1914. Mr. *Sinclair.* *Not Printed.*

No. 65 Return to an Order of the House of the 27th February, 1914, for a Return showing:—1. What timber limits, or areas, have been sold by the Government since the first day of January, 1913, and the total area of each. 2. The price at which each such limit, or area, was sold. 3. The names of the respective purchasers and if any were sold at public auction. 4. And if any were so sold at auction, which limit or area was so sold, and the dates on which the several sales took place. Presented to the Legislature, March 18th, 1914. Mr. *Mageau.* *Not Printed.*

No. 66 Return to an Order of the House of the 6th March, 1914, for a Return showing:—1. Application for license of William Smuck of the Township of Bayham in the electoral district of East Elgin for the year 1913-14; the granting thereof; the withdrawal of such application; all correspondence between the Department and any officer thereof and the said Smuck, or the License Inspector or other residents of East Elgin in reference thereto. 2. The application of the said Smuck to be appointed License Inspector for East Elgin, and all protests against his appointment. 3. All letters, reports or communications in reference to the health or work by the former License Inspector, Mr. W. R. Andrews. 4. The resignation of the former License Inspector or Notice of the Termination of his employment. 5. All protests or complaints during the years 1912, 1913 and 1914 from residents of Aylmer or other citizens of East Elgin in reference to the lack of enforcement of the License Law and the conduct of the hotels in Aylmer or of license officials of East Elgin. Presented to the Legislature, March 27th, 1914. Mr. *Rowell. Not Printed.*

No. 67 Minutes of the Proceedings in Conference of the Representatives of the Provinces, October, 1913. Presented to the Legislature, March 19th, 1914. *Printed.*

No. 68 Return to an Order of the House of the 2nd March, 1914, for a Return showing:—1. What amount was received by the Government from Messrs. Taylor, Scott & Co. for the work done by prisoners from Central Prison under its contract with Taylor, Scott & Co., dated 1st September, 1905, for each year during which the contract was in force. 2. How long was the contract in force. 3. What amounts were paid by the Government for debt, damages or costs respectively in connection with or arising out of the said contract. 4. To whom were such amounts paid. 5. Was the agreement between Taylor, Scott & Co. and the Government changed after the agreement had been submitted to the House and approved by it. 6. If it were changed, were such changes embodied in an agreement in writing between the parties. 7. If it was changed, was such change or modified agreement submitted to the House for approval. Presented to the Legislature, March 23rd, 1914. Mr. *Bowman. Not Printed.*

No. 69 Return to an Order of the House of the 18th March, 1914. for a Return showing:—1. The names of the license holders under the Liquor License Act in the City of Toronto for the year from 1st May, 1908, to 1st May, 1909, and the place or places of business in which each license holder carried on business. 2. The names of those license holders under the said Act, and the location of the premises in which they carried on business, whose licenses were cut off or were not renewed in the year

1909 in Toronto. 3. The names of the license holders in Toronto whose licenses were transferred with the approval of the Board of License Commissioners in the years 1909, 1910, 1911, 1912 and 1913; the places in which they carried on business; the names of the persons to whom licenses were transferred; and the locations of the premises in which the persons to whom the licenses were transferred carried on business. Presented to the Legislature, March 23rd, 1914. Mr. *Proudfoot. Not Printed.*

No. 70 Return to an Order of the House of the 26th March, 1913, for a Return showing:—1. All the correspondence (including telegrams) passing between the Prime Minister, the Attorney-General, the Minister of Crown Lands or any other member or official of the Government and the Counsel or Solicitors for Keewatin Power Company, or the Counsel or Solicitors for the Hudson's Bay Company with reference to the action brought by these Companies against the Town of Kenora for a declaration that they and not the Crown were the owners of the water power on the East Branch of the Winnipeg River, and that the lease from the Crown to the Town of Kenora was invalid. 2. A copy of the telegram (if any) sent by the Prime Minister to the Counsel for the Keewatin Power Company advising him that the Government did not desire to defend its own title to the water power or be added as a party to the action. 3. All correspondence (including telegrams passing between the Town of Kenora or the Counsel or Solicitors for the Town of Kenora, and the Government or any Minister or official thereof with reference to these actions, and particularly all communications requesting the Crown to take part in the defence of its own title to the water power. 4. Copies of all correspondence (including telegrams) passing between the Prime Minister, Attorney-General, the Minister of Crown Lands or any other Minister or official of the Government, and Mr. W. H. Hearst, acting as Counsel for the Government, in reference to these actions. 5. Copy of the judgments of the Trial Judge and the Court of Appeal. Presented to the Legislature, March 24th, 1914. Mr. *Rowell. Not Printed.*

No. 71 Revised Rules, Orders and Forms of the Division Courts of the Province of Ontario. Presented to the Legislature March 26th, 1914. *Printed.*

No. 72 Correspondence and Papers relating to timber in the Algonquin Park Forest Reserve. Presented to the Legislature, March 27th, 1914. *Printed.*

No. 73 Whitson's Report upon Road Construction in Northern Ontario. Presented to the Legislature, March 30th, 1914. *Printed.*

No. 74 Return to an Order of the House of the 27th February, 1914, for a Return showing:—1. The names of the tenderers for the supply of coal for Government Institutions, in Toronto, during the years 1910, 1911, 1912 and 1913, respectively. 2. The amount of each tender for each of such years. 3. The names of the contractor or contractors for each of such years. 4. The amount of coal supplied under each contract during each year. 5. The prices at which the coal was purchased. Presented to the Legislature, March 31st, 1914. Mr. *Bowman. Not Printed.*

No. 75 Return to an Order of the House of the 27th February for a Return showing:—1. What buildings have been erected by the Province at the Prison Farm at Guelph. 2. What has been the total cost to the Province of each building. 3. Were any of these buildings built by prison labour in whole or in part. 4. If so, what buildings, and what class of prison labour was employed. 5. And if the statement of cost makes any allowance for the prison labour employed, if any. Presented to the Legislature, March 31st, 1914. Mr. *Atkinson. Not Printed.*

No. 76 Return to an Order of the House of the 18th March, 1914, for a Return showing:—1. Whether the Minister of Agriculture or any officer or official of his Department, or the Minister of Education or any officer or official of his Department, communicated with the district representative of Agriculture within the County of Welland with reference to his attitude to the Canada Temperance Act or the vote to be taken thereon on the 29th January last. 2. And if any communication was made, was such communication verbal or in writing. 3. And who was the officer making the same, and what was the date thereof. Presented to the Legislature, March 31st, 1914. *Not Printed.*

No. 77 Return to an Order of the House of the 27th March, 1914, for a Return showing:—1. The conditions upon which grants are made to rural public schools. 2. Were the grants to the rural public schools of Ontario in 1913 less per school in 1913 than they were in the year 1912. If so, how much. 3. Has the Department of Education notified the Boards of Public School Trustees of Rural Schools, or any of them, that they cannot pay the grant provided for by the regulations. 4. If such notice has been given, upon what their ground for refusing to pay the grants. 5. Has the Department of Education notified the School Boards of Rural Schools, or any of them, that the grants this year would be cut down 28 *per cent.*, or any amount whatever. If so, how much. Presented to the Legislature, April 1st, 1914. Mr. *Kohler. Not Printed.*

No. 78 Return to an Order of the House of the 30th March, 1914, for a Return showing:—1. What was the estimated cost of the heating plant for the Toronto University. 2. What was the actual cost of the plant when fully completed. 3. Has the total amount

been paid; if not, what amount, if any, is held in reserve. 4. And if the heating plant is giving satisfaction. Presented to the Legislature, April 1st, 1914. Mr. *Bowman*. *Not Printed.*

No. 79 Return to an Order of the House of the 1st April, 1914, for a Return of copies of all correspondence, resolutions or other documents received by, or on behalf of any Member of the Government in any way relating to the Hamilton Athletic Association regarding which certain legislation is sought for during the current Session. Presented to the Legislature, April 2nd, 1914. Mr. *Studholme*. *Not Printed.*

No. 80 Return to an Order of the House of the 1st April, 1914, for a Return showing:—1. What sum of money has Sir William Meredith, the Chief Justice of Ontario, received from the Government in addition to his salary as Chief Justice, since January 1st, 1909, to date. 2. In what capacity did Chief Justice Sir William Meredith receive such sum or sums, and what amount was received with respect to each capacity in which he received any sum or sums as aforesaid. Presented to the Legislature, April 2nd, 1914. Mr. *Anderson (Bruce)*. *Not Printed.*

No. 81 Return to an Order of the House of the 27th March, 1914, for a Return showing:—1. If there was a deficit in the financial operations of the Provincial University for the fiscal year ending 1912. If so, how much. 2. Was there a deficit in the financial operations of the Provincial University for the fiscal year 1913. If so, how much. 3. If there have been deficits during the years 1912-13, or either of them, how have these deficits been provided for. 4. What is the estimated expenditure of the Provincial University for the current fiscal year. 5. What is the estimated revenue of the University for the current fiscal year. Presented to the Legislature, April 2nd, 1914. Mr. *Marshall*. *Not Printed.*

No. 82 Return to an Order of the House of the 27th March, 1914, for a Return showing:—1. If there was an option given to the firm of Murray, Mather & Co. to purchase certain Government securities during the calendar year 1913. 2. If so, what was the date of the option, and what were the character, amount and price of the securities covered by it. 3. Was such option, if any, exercised; and if so, to what extent. Presented to the Legislature, April 3rd, 1914. Mr. *Sinclair*. *Not Printed.*

No. 83 Return to an Order of the House of the 27th March, 1914, for a Return showing:—1. Copy of evidence of Mr. Taylor, of Messrs. Taylor, Scott & Co., given before the Dominion Penitentiary Investigation Commission, of which Mr. G. M. Macdonald, K.C., of Kingston, is Chairman, and which was taken in Shorthand by a Stenographer provided by Dr. Gilmour,

Warden of the Central Prison, such evidence or a copy thereof being now in the custody or control of the Provincial Secretary, or of some of the officers or officials of his Department, or of the institutions under the control of his Department. 2. Copies of all correspondence passing between the Provincial Secretary, or any officer or official of his Department, or any officer or official of any of the institutions under the charge of his Department, and Mr. Joseph Downey, in reference to the said evidence or the production thereof. Presented to the Legislature, April 3rd, 1914. Mr. *Bowman*. *Not Printed.*

No. 84 Report of the Good Roads Commission. Presented to the Legislature, April 7th, 1914. *Printed.*

No. 85 Copy of an Order-in-Council approved by His Honour the Lieutenant-Governor, under the provisions of 552 of sec. 18 of the Municipal Drainage Act. Presented to the Legislature, April 8th, 1914. *Printed.*

No. 86 Return to an Order of the House of the 2nd March, 1913, for a Return showing:—1. Copies of all correspondence between the Minister of Education or any other member or official of the Government and any other person or persons during 1910, 1911 and 1912, relating to the investigation made by Dr. Merchant of the bi-lingual or French-English Schools in Ontario. 2. Copies of all correspondence between the Minister of Education or any other member or official of the Government and any other person or persons during the year 1912, relating to Regulation No. 17. Presented to the Legislature, April 9th, 1914. Mr. *Mageau*. *Not Printed.*

No. 87 Return to an Order of the House of the 7th April, 1914, for a Return showing:—1. How much the Hydro-Electric Power Commission has spent in building the trunk line from Morrisburg to Prescott, and from Morrisburg to Winchester and Chesterville. 2. Did the Hydro-Electric Power Commission enter into an agreement with the New York and Ontario Power Company, or any person on their behalf, for a supply of power for transmission on this line, to be developed at Waddington or elsewhere; and if so, what is the date of such agreement. 3. Was it a term of any such agreement that the Directors of the New York and Ontario Power Company became personally liable if power was not supplied within a certain defined time. 4. Has the Hydro-Electric Power Commission entered into any agreement with the Rapids Power Company for the supply of power; if so, what is the date of such agreement. Presented to the Legislature, April 9th, 1914. *Not Printed.*

No. 88 Coles' Report, Mining Engineer, Timiskaming and Northern Ontario Railway Company. Presented to the Legislature, April 28th, 1914. *Printed.*

No. 89 Return to an Order of the House of the 8th April, 1914, for a Return showing:—1. The number of convictions for intoxication in Local Option Municipalities. 2. Convictions for other offences against Local Option Law during the license year 1912-13. Presented to the Legislature, April 14th, 1914. Mr. *McPherson*. *Not Printed.*

No. 90 Official Regulations for the Government of the Andrew Mercer Reformatory. Presented to the Legislature, April 16th, 1914. *Printed.*

No. 91 Official Regulations for the Government of the Hospitals and Public Charities of Ontario. Presented to the Legislature, April 16th, 1914. *Printed.*

No. 92 Official Regulations for the Government of Common Gaols of Ontario. Presented to the Legislature, April 16th, 1914. *Printed.*

No. 93 Official Regulations for the Government of Industrial Farms in Ontario. Presented to the Legislature, April 16th, 1914. *Printed.*

No. 94 Official Regulations for the Government of the Ontario Reformatory. Presented to the Legislature, April 16th, 1914. *Printed.*

No. 95 Official Regulations of the Ontario Hospitals. Presented to the Legislature, April 17th, 1914. *Printed.*

No. 96 Statement of Statute distribution for 1913. Presented to the Legislature, April 21st, 1914. *Not Printed.*

No. 97 Return to an Order of the House of the 27th March, 1913, for a Return showing:—Copies of all Orders in Council passed under Section 8, of the Power Commission Act, as amended by the Power Commissions Act, 1912. Presented to the Legislature, April 21st, 1914. Mr. *Mageau*. *Not Printed.*

No. 98 Return to an Order of the House of the 1st April, 1914, for a Return showing:—1. All the schools in the Province, both public and separate, from which the Government grant has been withheld during the years 1912 and 1913 respectively. 2. The grounds upon which such grants have been withheld from the said schools respectively. 3. The grounds upon which County Councils are required to withhold from schools the moneys raised by taxation from the people. Presented to the Legislature, April 21st, 1914. Mr. *Racine*. *Not Printed.*

No. 99 Return to an Order of the House of the Twenty-first day of April instant for a Return of a Copy of the Letters, or Charter, of the "Ontario Homes Company, Limited," giving the Corporation license to promote a company for the purpose of engaging in the business of the purchase of real estate in manufacturing localities and showing what, if any, returns have been made to the Department and if the company is still doing business. Presented to the Legislature, April 22nd, 1914. Mr. *Studholme. Not Printed.*

No. 100 Return to an Order of the House of the 16th April, 1914, for a Return showing:—The quantity of settlers' effects delivered over the T. & N. O. Railway at New Liskeard and Cochrane, respectively, and carried as such under the regulations of the said Railway, for the financial year ending October 31st, 1913. Presented to the Legislature, April 24th, 1914. Mr. *Atkinson. Not Printed.*

No. 101 Return to an Order of the House of the 17th February, 1913, for a Return of: Copies of all correspondence between Bishop Fallon, of London, and the Provincial Secretary, the Minister of Public Works or any Member of the Government regarding the Bi-lingual Schools in the Province of Ontario, since the first day of May, 1910. Presented to the Legislature, April 24th, 1914. Mr. *Evanturel. Not Printed.*

No. 102 Return to an Order of the House of the 17th February, 1913, for a Return of Copies of all correspondence between Bishop Scollard, of Sault Ste. Marie, and the Government, regarding the Bi-lingual Schools of the Province of Ontario, since the first day of March, 1907. Presented to the Legislature, April 24th, 1914. Mr. *Evanturel. Not Printed.*

No. 103 Return to an Order of the House of the 16th April, 1914, for a Return showing:—1. All correspondence between the Department of Education and any officer or official thereof and the Board of Trustees of the Almonte High School. 2. All correspondence between the Department of Education and any officer or official thereof and any of the teachers in the Almonte High School. 3. All correspondence between the Department of Education and any officer or official thereof and Miss Eade with reference to an application by her for a position in the Almonte High School. Presented to the Legislature, April 28th, 1914. Mr. *Marshall. Not Printed.*

No. 104 Return to an Order of the House of the 21st April, 1914, for a Return showing:—1. The present practice of the Department of Education in regard to the number of text-books authorized for use in each subject in the Course of Studies. 2. The number of text-books authorized for use in the elementary and secondary

schools of Ontario issued since the date of the last return laid before this House, March 20th, 1911, and the methods adopted to keep these books up to the requirements of the schools. 3. The cost to the Province of each of these books in the form of payments to authors, printers and electrotypers. 4. The estimated saving to purchasers of all text-books in elementary and secondary schools on all the books as compared with previous prices of the same. 5. The amount annually paid in royalties by the Department of Education to writers of authorized text-books. 6. The cost to the Province of the preparation, editing, and printing of supplementary readers authorized for use in the schools. 7. The amount paid annually by publishers to any official of the Department of Education on text-books authorized for use in the schools of this Province. 8. What Ontario books have been adopted in other Provinces. Presented to the Legislature, April 28th, 1914. Mr. *Musgrove*. *Printed*.

Peel County—Hill Improvement on Hurontario Street.

ANNUAL REPORT

ON

Highway Improvement

ONTARIO

1914

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

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To His Honour Sir John Morison Gibson, Knight Commander of the Most Distinguished Order of St. Michael and St. George, a Colonel in the Militia of Canada, etc.

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

I herewith beg to present for your consideration the annual report of W. A. McLean, Commissioner of Highways, relating to Highway Improvement in the Province of Ontario.

Respectfully submitted,

J. O. Reaume,

Minister of Public Works.

To the Honourable J. O. Reaume,

Minister of Public Works.

Sir,—I have the honour to transmit to you the annual report on Road and Bridge Construction in Ontario, having special reference to the work carried on by the several counties of the Province during the year 1913 under the Act to Aid in the Improvement of Public Highways.

I have the honour to be,

Sir,

Your obedient servant,

W. A. McLean,

Commissioner of Highways.

Parliament Buildings, Toronto.

April 17th, 1914.

ANNUAL REPORT

ON

HIGHWAY IMPROVEMENT

By W. A. McLean, M. Can. Soc. C. E., Commissioner of Highways

Road improvement is a matter of deep interest throughout the farming districts of the Province. Of all means of transportation, they are the most intimately associated with the daily occupation and home-life of the people. The market, the school, the station, the church, the entertainment, the village, the store, the neighbour, are all reached over the common road. Every journey is wholly or in part over the common road, and the comfort and prosperity of the agricultural community are closely reflected by road conditions. Municipal organization is chiefly based on road improvement, and it is the principal object of municipal consideration and expenditure.

Steam and electric railways are necessary; yet neither of these do away with the need for good common roads, but rather increase that need. Railways bring about development; and that development means more people on the land, and more production, with an attendant greater use of local roads. This is indicated by the fact that roads carrying or paralleled by electric railways are among the first to be improved; such as Yonge Street, the Kingston Road, the Lake Shore Road, the Weston Road, radiating from Toronto and carrying electric railways. The same is true of the Stoney Creek Road easterly from Hamilton along the south shore of Lake Ontario; while other instances are common.

Good Roads are the basis of intensive farming. Good Roads are, therefore, not to be regarded as rivals in public favour of steam and electric railways; but rather is it the case that all are necessary links in a completed chain of transportation. Without Good Roads it is impossible to market vegetables, fruit, and tender farm produce. Intensive farming brings about the division of large farms into smaller; a condition which means that a greater proportion of the population is producing wealth from the land. Good Roads are a chief factor in drawing people to the land.

The Highway Improvement Act.

Substantial progress in road construction was made throughout the Province during the year on County Road Systems subsidized by the Government under the Highway Improvement Act. Work was carried on in twenty counties, the total expenditure for construction being as follows:—

Road Construction	$575,691 17
Bridge Construction	159,925 03
Superintendence	28,850 25
Machinery and Equipment	41,195 97
Special County Grant to Townships, Villages and Towns	20,021 73
Total	$847,684 15

The Provincial subsidies amounted to one-third of the foregoing, or $282,-561.35; the total amount raised by the counties being $565,122.80. The greater part of the county expenditure was met by the issuance of debentures extending over periods of from twenty to thirty years; but of twenty counties carrying on construction under the Act, ten are raising their funds principally by annual rate on the equalized assessment of the county. Of the foregoing county expenditure ($565,122.80), the sum of $193,044.27 was raised by direct levy for the year and the remainder by debenture issues.

The work carried out comprised:—

Roads graded, drained and surfaced with broken stone ..	161.48	miles.
Roads graded, drained and surfaced with gravel	90.45	"
Total mileage metalled	251.93	"

There was included also the construction of 98 steel or concrete bridges; 142 concrete culverts (arches or slab covering) ten feet or less in span; 605 tile culverts; and 60 miles of grading in preparation for the next season's work.

Expenditure by Counties

The following schedule shows the total expenditure by counties for the year 1913 under the Highway Improvement Act.

County	Total Expenditure	Government Grant	Raised by County
	$ c.	$ c.	$ c.
Wentworth	12,205 33	4,068 44	8,136 89
Lanark	18,758 47	6,252 82	12,505 65
Simcoe	30,703 76	10,234 59	20,469 17
Wellington	55,278 39	18,426 13	36,852 26
Lincoln	12,601 16	4,200 38	8,400 78
Oxford	19,008 37	6,336 12	12,672 25
Hastings	45,250 87	15,083 62	30,167 25
Peel	77,707 64	25,902 55	51,805 09
Middlesex	30,268 55	10,089 52	20,179 03
Lennox and Addington	14,290 14	4,973 38	9,946 75
Prince Edward	16,954 96	5,651 65	11,303 31
Halton	85,232 14	28,410 71	56,821 43
Perth	36,585 77	12,195 25	24,390 52
Frontenac	27,446 65	9,148 88	18,297 77
Waterloo	44,818 40	14,939 47	29,878 93
Carleton	44,145 11	14,715 03	29,430 08
Leeds and Grenville	50,818 54	16,939 51	33,879 03
York	96,676 74	32,225 58	64,451 16
Haldimand	61,003 24	20,334 41	40,668 83
Welland	67,299 92	22,433 31	44,866 61
Totals	847,684 15	282,561 35	565,122 80

SARNIA MODEL ROAD.

A model concrete road was constructed at Sarnia on one of the leading entrances to the city. The length is 5,946 feet: the concrete being sixteen feet wide and seven inches thick, with gravel shoulders four feet wide on each side. The work was carried out in accordance with the Specifications for Concrete Roads as contained in the Report of this Office for the year 1913. The mixture was composed of one part of cement (of which 10 per cent. by volume is hydrated lime) and four parts of gravel, laid in one course. The road before improvement was unmetalled, flat and undrained. Toward the cost of construction the City of Sarnia contributed $8,000. The methods employed were as follows:—

Grade stakes having been placed by the engineer down the centre and along the sides of the road, the earthwork was commenced. The sod was ploughed and carried away to the side of the road with drag scrapers. The open gutters on the side of the pavement were then formed by ploughing and scraping the earth into the centre of the road. This earth being free from humus was very valuable for building up the subgrade, which had been lowered by removing the surface sod.

As soon as the gutters had been roughly formed and the earth disposed of as described, the road roller was put at work compacting the earth base. Each time the roller had passed over the whole subgrade, the road grader was put on to remove irregularities from the edge of the subgrade, which tended to fall away under the weight of the roller.

Meanwhile a contract had been let for tiling both sides of the road with a tiling machine. The machine straddled the gutter, in the bottom of which the trench was formed, and the tile were put about three feet deep, as nearly as the surface grade would permit. The price for this work was 50 cents per rod, which was very favourable as compared with hand-work, and much better results were obtained.

As soon as the subgrade on the most distant portion of the work had been prepared as described, a number of teams and men were put at work hauling gravel from the dock, for the concrete pavement. The dock was at the bottom of a short but very steep hill, which required the use of an extra team to haul the loads up. This work was put in charge of a sub-foreman. Endeavour was made to employ such number of teams and men as to keep one team busy assisting the others up the hill, and to keep one man busy helping the teamsters unload their gravel boxes, which were constructed of loose sides and bottoms. The gravel was deposited on the road in a continuous row two loads wide and two loads deep. This was done to provide sufficient surplus of gravel for a thin layer between the subgrade and the concrete, and also for a surplus which was used to cover and protect the newly-laid concrete.

The gravel used on the work was supplied from the St. Clair River at Point Edward and was delivered by scows operating with a clam shell. The price paid was 45 cents per cubic yard, delivered on the dock. At the same time a storehouse was built at a convenient spot on the side of the road, to store cement and lime to be used for the concrete pavement.

When sufficient gravel had been hauled to keep the concrete mixer going for two weeks, a gasoline concrete mixer was installed in front of the storehouse, and a large concrete pavement mixer was moved to the road. The gasoline mixer was

used to mix the cement and hydrated lime. Ten per cent. by bulk of lime was used. The machine used for this work was rented from a local contractor and was operated by seven men and a foreman who also ran the engine. The lime was kept in the storehouse and the cement was hauled from the car directly to the machine, where it was mixed with the lime, rebagged and either placed in the storehouse to be kept as a reserve supply, or hauled directly to the concrete mixer.

Ordinarily a car of cement was mixed with the necessary lime in a day and a half.

When the large concrete mixer was fitted up satisfactorily, the Superintendent suspended grading operations temporarily and devoted his attention to the concrete work. The manner of carrying on this work was as follows:

A 1¼ inch iron water main was connected to the town's hydrant and laid in the gutter. This pipe was provided with tees and plugs at about every 150 feet.

Sarnia Model Road—Concrete Mixing Outfit.

Shut-off valves were also inserted in the pipe line at several convenient places. By providing 100 feet of one-inch rubber hose, which was attached to the pipe by means of the tees, a constant supply of water was available at any point and at any and all times for moistening the subgrade, mixing the concrete, and for keeping the finished concrete wet while it was setting.

The Superintendent took immediate charge of the work. Ordinarily twenty men and one team in addition to the engineer were required to operate the machine. The men were arranged as follows:

1 Superintendent.
1 working forman.
1 team delivering cement-lime mixture.
1 man handling cement at mixer.

8 gravel shovellers.
2 men wheeling gravel to mixer.
1 engineer.
1 fireman.
1 man dumping bucket.
2 men shovelling concrete and operating first template.
2 concrete finishers.
2 extra men for watering concrete, removing forms, greasing expansion joint strips, and covering concrete with gravel.

The two concrete finishers also operated the box template and set the wooden curbs or concrete forms.

Stakes twenty-five feet apart were driven to line and grade daily by the engineer in charge. Lines were stretched on the top of these stakes by the finishers, and intermediate stakes approximately four feet apart were driven to support the curbs.

As the concrete hardened, it was covered with the excess gravel which had been hauled for that purpose, and shovelled outside of the concrete forms. This gravel when kept damp protected the concrete from the hot sun and prevented it from drying out too rapidly.

As the concrete work advanced, it was deemed advisable to continue the grading under an additional sub-foreman. The hauling of gravel was also resumed, and the engineer for the concrete mixer operated the road-roller after hours in the evenings. This did away with the necessity of hiring an extra engineer whose time would not be fully occupied.

When the concreting was finished and the concrete had been allowed from ten days to two weeks to set, the gravel covering was shovelled off and the expansion joints, which were thirty feet apart, were cleaned out. The joints were then half filled with building sand and the remainder filled to overflowing with paving pitch. This pitch was applied by means of a portable tar kettle to heat it and a cone-shaped ladle with a half-inch runner at the bottom. This runner could be regulated by a plug at the end of an iron rod leading up to the handle of the ladle.

As the concrete pavement was only sixteen feet wide and the traffic quite heavy, gravel shoulders four feet wide were added at each side. As water-washed gravel was used, it was found necessary to bond it by raking limestone screenings into it.

The prices paid for labour were somewhat high owing to local conditions, and were as follows:—

Foremen	$2.50 to $4.00 per day.
Engineers	40 cents per hour.
Labourers	25 cents per hour.
Teams	55 cents per hour.

Hydrated Lime.

Hydrated lime was first used in a short experimental section of concrete pavement at Windsor, constructed by this Department in 1912; and this material was used throughout the work at Sarnia. The lime was obtained from the Central Prison Farm at Guelph, where it is manufactured by prison labour. Hydrated lime has been previously employed in making waterproof concrete,

and its value in this regard is well known. The effect of the lime is to act as a void filler, at the same time increasing the plastic and flowing qualities of the mortar. In this way a denser mixture results, tending, it is believed, to a tougher, better wearing, and more uniform quality of concrete, making a mortar which adheres more strongly to the stone, and lessening the danger from incomplete mixing and tamping.

Recent tests have shown also that the expansion of concrete is due more to the presence of moisture than to change of temperature. The denser concrete, it is believed, will have less tendency to movement due to expansion and contraction than one in which hydrated lime is not used, and it is probable that the liability to transverse cracks in the pavement is thereby lessened.

Sarnia Model Road—Mixing Cement and Hydrated Lime.

Use in pavements is a severe test of the durability of any material. Spread in a thin layer over the soil, it is fully exposed to the destructive influences of climatic and weather conditions—extremes of frost and heat, snow, slush and rain—combined with the wear of narrow steel tires, iron-shod horses, and the bending, crushing effect of heavy loads. The use of hydrated lime at Windsor and Sarnia should do much to determine whether the practical benefit of hydrated lime is equal to its theoretical value.

The unit cost per square yard of concrete was as follows:

Grading and ditching	$0.155
Mixing lime and cement	0.084
Hydrated lime, 29 tons	0.022
Cement, 3,462½ bbls.	0.367

Gravel, 3,117½ cu. yds.	0.294
Labour on concrete	0.200
Expansion joints	0.011
Drainage	0.111
Gravel shoulders	0.187
Supervision	0.057
Tools and sundries	0.054
Unit cost per square yard	$1.542

Wolfe Island Model Road—Quarrying.

WOLFE ISLAND MODEL ROAD.

A model macadam road was constructed on Wolfe Island, southerly from the Village of Marysville. The island is adjacent to the City of Kingston, and is included in the county organization of Frontenac. The population is about 1,400 and the assessed area 31,254 acres. The Island is very fertile, but very little permanent improvement of any kind had been made in the roads.

The road selected for construction is one which receives a large part of the traffic of the Island in reaching Marysville, from which a municipal ferry runs to Kingston, to which market the produce of the Island is carried.

The road is constructed of broken lime-stone, quarried on the Island and adjacent to the road. The Township Council quarried the stone, piling it ready for the crusher. The width of grade is twenty-six feet between ditches, with stone spread from twelve to fourteen feet wide, and uniformly nine inches in thickness. The distance macadamized was 1.41 miles, the work being carried out in accordance with the specifications of this Department.

Wolfe Island Model Road—Before Improvement.

Wolfe Island Model Road—After Improvement.

Before improvement, the road had only a clay surface, was badly cut up, without drainage, and almost impassable during spring and fall months.

In constructing this road, suitable drainage was provided and the following concrete pipe culverts were laid: one 15-inch, three 18-inch, and one 24-inch; also one 36-inch corrugated metal pipe culvert: all bedded in concrete and having concrete head-walls. There are also two 4 ft. x 4 ft. re-inforced concrete culverts 24 feet in length.

The unit cost per square yard of stone surface was not quite 73 cents, as follows:—

Culverts and tiling at farm entrances	$0.157
Grading	0.060
Ditching	0.023
Crushing	0.130
Macadamizing	0.106
Rolling and sprinkling	0.068
Coal and oil	0.042
Supervision	0.094
Tools and reparis	0.014
Plans and surveys	0.008
Sundries	0.022
Unit cost per square yard	$0.724

BITUMINOUS ROADS.

Bituminous roads may be broadly defined as those in which tar, asphalt or asphaltic oils are used as a binder for stone, gravel, sand and slag—or as a protective coating in forming the wearing surface. One of the earliest instances of bituminous construction in Ontario is found in the old tar sidewalks, once common throughout the Province, in which gravel, intermixed with tar, was used. Later, tar macadam roads were constructed, in which broken stone mixed with tar was employed—notably in the city of Hamilton, where a number of these old tar macadam streets are still in use. Sheet asphalt is a well-known instance of bituminous road, in which, over a concrete foundation, is spread a coating, usually two inches in thickness, consisting of asphalt and sand—approximately 90 per cent. of sand and 10 per cent. of fluxed asphalt.

The tar preferred in road construction is produced in gas-house retorts in the manufacture of gas from coal. Tar is also obtained in the water-gas or oil-gas process. Pitch, frequently referred to in connection with bituminous roads, may be described as a solidified tar obtained in the evaporation or distillation of crude tar. And refined tar is a tar freed from water and brought to a desired consistency by evaporation; or is a tar especially prepared by the mixing of tars, oils, or distillates to produce a desired consistency. Asphalt is a native bitumen or tarry material occurring in large lake-like deposits, such as those in the Island of Trinidad and in Venezuela; or is a residuum obtained in refining certain petroleum oils such as those obtained in Texas and California. A flux is an oil used in diluting tar or asphalt to a desired consistency for use in the road.

Bituminous road surfaces, rightly built, produce a minimum of noise and dust. They are durable and provide a good foothold for horses; are smooth and agreeable to drive on; and are a most desirable type of construction.

Economically, however, bituminous treatments on country roads are suitable only for heavy or moderately heavy traffic, especially that of motor vehicles, As compared with a gravel or waterbound macadam road, if traffic is very light, the use of bituminous surfaces will increase the cost of maintenance; if traffic is heavy, they reduce the cost of maintenance.

The tendency of motor traffic is to remove the dust and fine material from between the stones of a common macadam road, with result that the stone becomes

York County—Spraying Tar on Dundas Street, (Eaton Road).

loose, and the surface "unravels." When traffic is such that this unravelling of the surface becomes marked, the need of bituminous treatment is indicated, as a means of reducing the cost of maintenance.

A road may not need the same class of surface from end to end. All depends on the amount and class of traffic. A road entering a city or town may need bituminous treatment within, and for a mile or two distant from the town; at which point traffic may have become so diffused that a common gravel or macadam surface will suffice, and will be the most economical. On the other hand, traffic on a main road between two cities may be such that proper service and economical maintenance will strongly indicate the value of a surface protected by or bound with bitumen for the entire distance. As previously stated, the amount and class of traffic will indicate the proper method to employ; not merely the existing traffic, however, but the traffic to be anticipated as the result of an improved road.

A road or pavement may be conveniently divided, for consideration, into four parts:

(1) The system of drainage, (2) the earth subgrade, (3) the foundation, and (4) the wearing surface.

Foundations.

A secure foundation is an absolute necessity for permanent bituminous coatings. To this end a substantial depth of foundation should be used, a condition with which roads on this continent have not always complied. Very few conditions of heavy or constant traffic can be successfully met with a less foundation than 6 to 8 inches, or a less total depth of stone in the road crust than 10 to 12 inches. The price of good roads in one particular, at least, is a substantial depth

York County—Bituminous Surface on Dundas Street (Eaton Road).

of stone. The difficult part of our problem, a financial aspect, is not so much the selection of a wearing surface as our ability to pay for strong foundations. The existing foundation, or local materials available for a foundation, will frequently dictate what the surface should be.

Heavy motor trucks and busses are placing a great and unexpected strain on road foundations. On main roads leading out of London, England, old 6-inch concrete foundations are being torn up and 9-inch foundations put in their place. This is necessitated by heavy and constant motor-bus and traction engine traffic.

In Great Britain, France and other countries of Europe, bituminous treatment has largely become the accepted practice in meeting the requirements of motor traffic in the open country: by carpet coats; by grouting or penetration: and by mixing methods, according to local conditions. It need not be said that

asphalt and tar are now, on this continent, being used with marked success—a result that has been reached after many trials, and not without tribulations.

That bituminous paving has been markedly successful in England is probably due, to a large extent, to the fact that it has been commonly applied only on old, solid, and well-settled foundations, in resurfacing their old telford and macadam roads. Many of the failures on this continent, on the other hand, have plainly been due to weak, badly-drained foundations. To uneven settlement of new roads under traffic may be attributed much of the failure of bituminous surfaces, rather than to any inherent defect in bitumen itself for road purposes.

Roads, as we now build them, are rolled in several layers with a ten or twelve ton roller, giving a compression of 500 lb. per inch. Traffic follows with tire compression up to 700 and 800 lb. per square inch. Under succeeding wet conditions of fall and spring, settlement must inevitably occur, leading to an uneven, wavy surface and consequent decay.

A broken stone road commonly does not reach final settlement for two or three years after first construction, but within that period permanent subsidence may be taken for granted. French and English road-builders laying bituminous surfaces over their old roadbeds, are manifestly not dealing with a condition which commonly exists here.

A reasonable course to pursue in many cases would be to build waterbound macadam roads on telford or other suitable foundation. The surface could be maintained for two or three years by thin carpet coats or by oiling. At the end of that period perfect settlement and stability of the foundation having been attained, a heavy and durable bituminous surface could be applied where traffic demands it.

Consideration of methods of using bituminous materials may be under the following heads:—

1. Carpet Coats.
2. Penetration Method.
3. Mixing Method.

Carpet Coats.

A Carpet Coat, as the name indicates, consists of a thin covering of tarry or asphaltic material spread over the surface of a broken stone road. Two purposes are served:

(1) The surface of the road is protected from wear and unravelling; and (2) Dust is effectively prevented. The materials used for the purpose may be an asphaltic oil, asphalt fluxed with naphtha and oil, or a tar suitably fluxed. A sufficient proportion of flux may be used to permit cold application; or the material may contain so high a percentage of bitumen that it must be heated for application.

For best results, the road should be well constructed, with a smooth surface, free from ruts or holes. Before treatment it should be thoroughly cleaned to remove all dust and to leave the stone exposed. When a road is treated with a heavy oil, one containing a high proportion of bitumen, it is usually covered with a light coating of stone chips or pea gravel to prevent stickiness, and give a more definite wearing quality to the coat. The quantity of oil required varies with the character of the material, but ordinarily about ¼ to ½ gallon to the square yard is used. A thin, tough and uniform film should be sought, rather than a thick covering.

The life of a Carpet Coat depends on the amount and nature of traffic to which the road is subjected, the quality of material used, methods of application, and the provision for repair and maintenance. Light oils containing up to 40 per cent. of asphalt may need renewal several times in a season. A cold application of tar should last a season, and the effect should be apparent the next summer. Hot applications of tar or heavy oils containing 80 per cent. or 90 per cent. asphalt, are more durable, and with a system of repair rather than renewal, should last two seasons.

Oils and tar may be purchased by the barrel, but if the extent of the work permits, it is cheaper to buy in tank cars containing 6,000 or 8,000 gallons. If light material, it may be drawn by gravity or pumped to the distribution wagons; but if heavy bituminous material, it must be previously heated. For that purpose steam coils are provided in the cars, and steam forced through from a portable boiler of about 20 h.p.

York County—Repairing Bituminous Surface on Dundas Street (Eaton Road).

Light oils are usually applied to the road from common tank wagons, the sprinkler being provided with suitable perforations. The distributor should be adjustable in width from 6 to 12 feet so as to avoid the application of narrow strips. The rate of application may be controlled by the rate at which the team walks. Hot (and heavy) applications, however, may preferably be applied from pressure distributors of which there are various kinds. In one type the oil is forced through a series of small nozzles under a force obtained by maintaining an air pressure in the top of the tank. In another type of distributor, the oil or tar is atomized by air pressure, very much as in oil burners, or as in medical atomizers, the liquid being converted into a fine, misty spray. When applied by pressure distributors, the material is forced into the surface of the road, not only adhering more tenaciously, but is driven

downward into the road. These distributors are filled with interior steam coils, and are drawn by a traction engine or steam roller. Steam connection may thus be made with the tractive power to keep the tar or oil properly heated to about 280°F. A distributor should be capable of distributing evenly from ¼ to 1½ gallons per square yard. A pressure distributing wagon of about 600 gallons capacity will cost about $750. Should the work not be of sufficient extent to justify the purchase of such equipment, recourse may be had to a 500 gallon melting wagon and a hand distributor mounted on wheels. A hand distributor holding about 30 gallons is adjustable with a maximum spread of 20 inches, and costs about $75.

Penetration Method.

"Bituminous macadam" as the name indicates, may be described as a broken stone road, bonded with tar or asphalt, the bituminous material being poured hot into the interstices of the stone. A four-inch layer of stone (such as is

York County—Bituminous Surface on Kingston Road.

retained by a 1½ inch ring and will pass a 2½ inch ring) is first spread evenly over the foundation, and rolled to an even surface. Into this the heated bitumen is poured. The pouring may be done either from small cans or from large tank wagons from which it is sprayed under pressure. A penetration of about 2½ inches is usually sought, using about 1¾ gallons of bitumen to the square yard. Over this is spread a light coat of stone chips, and the surface is then thoroughly consolidated by a steam roller. It is good practice to then give a paint or squeegee coat of bitumen (about ¼ gallon to the square yard), adding another sprinkling of stone chips to dry the surface, which is again finally rolled.

In the Penetration Method the tar or asphalt have commonly been poured by hand, using distributing pots made for the purpose; the bituminous material being heated in portable or semi-portable melting kettles of from 50 to 500 gallons

capacity. This method, however, is slow and expensive, and results are seldom satisfactory; the tendency being to overheat the bitumen or to apply it too cold. The pressure distributors as described for use in laying carpet coats are more satisfactory for the work: and cost very little more than say two melting kettles (at $400 each) with additional hand-distributing pots and buckets. For small sections of work the hand distributor mounted on wheels with a strong 500 gallon melting wagon will give reasonable service: but will complete about 250 square yards per hour as compared with 800 square yards completed by a good distributing wagon, using one and a half gallons for the first pouring and one-quarter to one-half gallon per square yard for the flush coat.

Mixing Method.

Tar macadam roads were originally made by mixing crude coal gas tar with broken stone. The mixing was done on boards by hand, very much as concrete is mixed by hand. The results, while indicating the value of bituminous macadam, were uncertain, owing to the inferior process of treating the materials. When sheet asphalt was introduced, the industry created a more rapid development of paving plants. A better understanding of the materials has been obtained, however, and efficient equipment has been devised for handling them.

"Bituminous Concrete" is a surface made by the mixing method. Over a layer of broken stone is first sprinkled a light coat of tar as a "binder coat," to unite the surface to the foundation. On this is spread a layer of stone with which hot asphalt or tar has been previously mixed. Mixing was first done by hand, but the practice is now to pass the material through a plant which heats and dries the stone, and in a revolving process similar to the concrete mixer, coats all particles of stone with bitumen. The coated material is then conveyed to the road, spread and rolled to a depth of two to three inches. This is treated with a squeegee surface, as in the case of the penetration method.

The mixing method is more expensive than the penetration method, but bituminous concrete is more certain in its results, is more desirable, and will support heavier traffic than will bituminous macadam. In the mixing process, a maximum density of aggregate is sought, using stone carefully graded from fine to large.

One method of proportioning aggregate for maximum density was patented (Warren's Bitulithic), but similar results are now sought under what have become known as the Topeka Specification.

The Topeka specifications provide an aggregate mixed as follows:

Passing a	200	mesh	seive ..... 5 to 11 per cent.
"	40	"	..... 18 to 30 "
"	10	"	..... 25 to 55 "
"	4	"	..... 15 to 22 "
"	2	"	..... not over 10 per cent.

"Tarmac," one of the most successful proprietary mixtures used in England consists of iron slag, bound with tar. It has been described to the writer by an English authority as more nearly "fool-proof" than the majority of other combinations, in that inferior or careless workmanship seems to be less likely to cause bad results. The mixture of tar and slag is shipped in cars from the manufacturer's plant, ready to be applied cold to the road.

Another proprietary form of bituminous pavement is mixed with stone at a central quarry and is shipped by rail for cold construction. Sand in some cases is mixed with the bitumen for use in the penetration process. A variety of minor distinctions might be enumerated.

Ordinary sheet asphalt, which may be included under this heading, consists of about 10 per cent. bitumen and 90 per cent. sand, usually laid two inches in thickness on a concrete foundation. This material has not been used for roads in the open country: but a concrete foundation with a bituminous surface has been employed in some cases.

An adequate mixing plant has three duties to perform:

(1) It must heat and dry the sand and broken stone.
(2) It must melt and prepare the asphalt, tar or other bituminous material.
(3) It must intermix the sand, stone and bituminous material.

Waterbound Macadam Surface—Beginning to show the Sweeping, Unravelling Effect of Motor Traffic.

The best results require that proper proportions of the mineral aggregate (sand, stone, etc.) and bituminous material will be ready at one time—all moisture will be driven out of the sand and stone, that these with the tar or asphalt will be heated to the proper temperature, and that they will be mixed with precise uniformity. The most elaborate equipment for mixed bituminous surfaces is found in the permanent asphalt mixing plants in large cities, owned by the municipalities themselves or by paving contractors who are doing city work, principally for the construction of sheet asphalt. In Ontario, such asphalt plants are owned by the cities of Toronto, Hamilton and Ottawa. These consist of steel buildings containing large cylindrical dryers, mixers with capacity of 15 cubic feet, conveyors, independent motors, etc., and cost about $35,000. Such plants should turn out about 50 tons of mixed material per hour, or sufficient to lay 500 square yards of two-inch surface (compressed).

Smaller plants, semi-portable, are so constructed that they can be taken down, shipped from place to place, and set up without great expense. They are useful for contractors doing limited pieces of work in the smaller cities and towns. The cost, exclusive of covering is about $8,000, and the capacity is about 7½ tons or 75 square yards of two inch sheet asphalt per hour. They consist of a heating drum for the stone and sand, a melting pot for the bituminous cement, a mixer and minor equipment.

Railway plants, built on flat cars are useful. They can readily be moved from place to place, are readily taken down and set up, and are fully self-contained. The better types have a capacity of about 17½ tons per hour, or 175 square yards of two-inch sheet asphalt. The cost is about $14,000.

A still smaller, but less efficient machine is somewhat similar to the concrete mixer. The machine is mounted on wheels; and the distinctive feature from a ½-yard cube concrete mixer, is an oil torch device for heating the stone just

Waterbound Macadam Road, Treated with a Carpet Coat of Tar and Fine Gravel to Resist Motor Traffic and Prevent Dust.

before adding the bitumen. The bitumen is heated and measured separately, and the materials are passed through the mixer in batches in the same way as the concrete. It is usual to heat and dry the stone before putting in the mixer, and this may be done by means of wood fires in pipes under the stock piles. The stone should also be covered with tarpaulins to protect it from the rain, as the mixing may otherwise be seriously delayed. These machines should be used in pairs in order that the men may be kept busy when the stone is being heated in each alternately. The capacity of one of these mixers is about 22 square yards of two inch surface per hour. The output of two would be about 360 square yards in a 9-hour day. If sand is omitted from the mixture, the output may be considerably increased, and as high as 600 square yards per day are reported from one machine. A mixer costs about $1,800; and necessary tools would be about $400 additional.

Uniformity.

Uniformity is desirable with all classes of road surfaces, and is particularly necessary with bituminous roads. The foundation should be of uniform strength, so that it will not settle in depressions. The surface material should be of uniform thickness and wearing quality. When a carpet coat is applied, it should be spread evenly, over a smooth surface. In penetration work, the bitumen should be forced to a uniform depth, and the stone should be of uniform size. In the mixing method, the materials should be uniformly proportioned, using the various sizes of fine stuff, sand, stone and bitumen, in carefully and evenly graded quantities. The asphalt or tar should be heated to a uniform temperature, care being taken that it is not overheated, and that the flame does not come in contact with the material, or on the other hand, that it is not so slowly heated that the proper amount of flux is reduced by evaporation.

Machinery and equipment that permit the maximum uniformity of mixture or application are most favourable to good results. It must be impressed, however, that no machine alone has intelligence, and that skilled, attentive and experienced operation is a primary consideration. Many excellent roads have been built and maintained by the use of bituminous materials. On the other hand, a number of failures may be recorded—as with all classes of road material. But occasional failures have occurred when apparently every rule had been complied with—the cause could not be defined. For this reason, the use of bituminous materials involves a measure of risk—not great, it is true—which does not attach in the same degree to some other pavements.

OPERATION AND CARE OF MACHINERY.

W. Huber, Assoc. Mem. Can. Soc. C.E.

The advent of machinery of various kinds into road-building operations has had a two-fold effect—firstly, to shorten the time required to make a finished road, and to reduce or entirely eliminate the work of traffic necessary to put it into best condition for travel: and secondly, to replace a large part of the labour of men and teams, whose wages have been steadily rising, causing a continuous increase in the cost of construction. The introduction, first of the horse roller and latterly of the steam or gasoline roller, has accomplished the former end, while the use of grading machines, rock crushers and mechanical traction outfits has been instrumental in reducing the cost of labour, which constitutes such a large part of the total cost.

The use of machinery having become an increasingly important factor, a close study of the subject should be made by any official who has to do with its purchase or operation. While unit-costs in some portions of the work have, under favourable conditions, been greatly reduced, it must not be forgotten that money may be lost through the use of unsuitable machinery or through injudicious or interrupted operation, even faster than it can be saved by the best management.

The management of men and the operation of machinery are similar in at least one respect: both respond quickly to good treatment and a careful regard for their capabilities and shortcomings. In the handling of men much depends on selecting the right men for the various classes of work, seeing that the heaviest parts are performed by men physically fit, and those parts requiring the use of judgment by men possessing the necessary intelligence. The same applies to the selection of machinery. True economy will be effected only where the machinery is specially adapted for work under such conditions as usually obtain on County Roads, as opposed to other forms of construction work. The first step, and one of the most important, will be the careful consideration of all sides of the situation before deciding on the machinery to be purchased. Machinery once used and found unsuitable cannot be sold or exchanged except at a heavy discount: hence, final selection should be based on more than the arguments of sales agents.

Compared with other public works, road construction occupies a somewhat different position. The location of the work is continually shifting and the machinery used is frequently moved. This necessitates a degree of portability, even in that machinery which is stationary while in operation, not called for in other construction work. Another essential is that the capacity of the machinery be suited to the requirements of the work. A crusher capable of crushing more rock than can be used by the roadmaking outfit, unless such surplus is stored for other uses, or a traction outfit capable of hauling material far in excess of regular needs, represents so much capital needlessly tied up and increased operating expense, and may be compared to engaging more men for a given piece of work than are necessary to do it. Excess capacity may be advantageous on rare occasions under exceptional circumstances, but on regular work where the daily output is fairly uniform, it decreases the efficiency and affects the economy of operation.

The principal machines used in roadmaking are graders, rock crushers with their accessory elevators and bins, traction engines and cars, and rollers, together with a large number of minor items, as water-carts, pumps, steam drills, plows,

scrapers, drags, dump carts, wagons, etc. In every case, whether large or small expenditures are under consideration, there are possibilities of choosing unsuitable machinery, and care should be exercised to see that each purchase is made with full knowledge of the requirements of the work and the capacity and capabilities of the machine.

It is the purpose of this paper to draw attention to the main requirements to be considered in the intelligent selection of the principal machinery used in County Road construction, and to offer a few suggestions which may assist in producing economy and efficiency in its operation.

Graders.

Wherever possible the tractive power used in operating a grading machine should be supplied by a mechanical tractor or roller. The cost of operation of a steam or gasoline traction engine is roughly about equal to the wages of two teams. The amount of work which can be done will be from 25 per cent. to 100 per cent. greater, depending on the character of the work. Teams may be used to advantage only on light finishing work, where the time spent in resting may be reduced.

In the selection of a grader, the power to be used should be kept in mind. If mechanical traction is to be used, the heavier machine should be chosen. These heavy machines are unsuitable for work with teams, their extra weight requiring so much of the power as to leave little available for real work.

The grader, while a rough machine engaged in rough work, demands skill on the part of the operator, which can be acquired only through experience. More real science can be displayed in the two operations of grading and rolling than in any other road-building operations accomplished purely by labour. The necessity of employing men with the necessary intelligence, and who will make a real study of the work, is therefore obvious.

A discussion of road-graders would be incomplete without some reference to the pernicious practice of drawing sods to the centre of the road and leaving them there. This occurs chiefly in the work of maintenance, and should be discouraged or prohibited by the superintendent. It requires very little work to throw out all sods with a pitch fork, and the road surface is thereby left in better condition for consolidation and protected from a prolific source of dirt and mud in wet weather.

Tractors.

The question of mechanical traction can be settled only by careful consideration of local conditions. So many factors enter into success or failure that the whole situation must be gone into very thoroughly before deciding. Possibilities are great. While the cost of team haulage will lie somewhere between 20c. and 30c. per yard-mile, depending largely on the rate of wages and the energy displayed by the foreman in charge, mechanical haulage has been accomplished under very favourable conditions on large contracts for as little as 5c. per yard-mile. A fair average cost on road work would be, perhaps, 10c. to 15c. These figures are conditional, of course, on continuous operation. Economy demands that stoppages from any cause whatever be reduced to a minimum. In the case of team haulage, if a wagon breaks down, or a team makes a trip to the blacksmith shop, the delay is only partial, whereas a break on the steam or gasoline tractor means the temporary paralyzation of all hauling, and is liable to cause serious delay to the

whole roadmaking outfit. The traction outfit is a paying proposition only when it is moving. For this reason it is essential that no time be lost in loading and unloading. If the work consists of hauling stone from railroad cars, special unloading devices must be employed. The old-fashioned system of hand-shovelling directly into the wagons must be replaced by some method whereby the wagons may be loaded with a minimum delay. A number of devices are found, probably the most efficient being one which is used with railroad cars having a bottom dump, where the stone is discharged into a small trench excavated under the track and elevated to a bin from which it is loaded directly to the wagons. Such an outfit, requiring only one man to operate, could be cheaply constructed, the only machinery necessary being a small gasoline engine and a bucket elevator.

The choice between steam and gasoline should be made only after careful consideration. Steam traction engines have been in use for generations, have been brought to a high degree of perfection, and are thoroughly understood by at least a large number of the men operating them. On the other hand, the gasoline tractor is a comparatively new machine; the operation of gasoline engines of any kind is somewhat more complicated than steam, and a general knowledge of their deficiencies and treatment in case of trouble is as yet rather limited. With careful operation, and with a man who knows where to look for trouble, and how to remedy it when it occurs, the operation of gasoline tractors has been made successful and economical.

The chief difference between steam and gasoline engines lies in the fact that a steam engine will run as long as there is steam behind it and the parts hold together, whereas a gasoline engine will stop on the least provocation—the deposit of carbon on a spark plug, the loosening of a battery connection, a little dirt in the gasoline supply, etc.—often a cause so small as to be unnoticed by a person not fully experienced. Therefore, to insure satisfactory service, a gasoline engine operator must be a thoroughly competent man who absolutely *knows* his engine.

Provided with such an operator, a gasoline tractor has a number of advantages. No time is lost raising steam in the morning, and no stoppage is necessary during the day for firing or taking on water. The smoke and soot nuisance is eliminated. The cost of fuel, with gasoline at average prices, is slightly greater than for coal to operate a steam engine of equal power, but this small difference is counteracted in other ways.

The conditions producing the greatest economy in the operation of mechanical tractors, as opposed to team haulage, are: long haul, fairly good roads, and bridges and culverts in good repair. On long hauls, the proportion of time spent in loading and unloading the wagons, which is very unprofitable time for a tractor, is reduced. On the other hand, teams can be given a heavier load and be made to travel slightly faster on short hauls. Roads over which the outfit travels must be in reasonably good condition, else nearly all the power of the tractor will be consumed in propelling itself, leaving very little for hauling the load. Old wooden culverts and bridges will be a source of continual trouble. The first steps taken, if mechanical traction is decided on, should be the renewing of all old bridges and culverts. As this will eventually have to be done in any case, the expenditure will be justified. Some preliminary work with a grader on the roads to be traversed would probably reduce the hauling costs during the season.

A mistake made by many municipalities and contractors is that of purchasing too heavy and too slow a machine, and wagons of too large capacity. A lighter

tractor capable of hauling say four three-yard wagons at a speed of three miles per hour loaded and three and a half or four miles empty, will be found more serviceable than one which will haul larger loads at a decreased speed. Besides being much more easily manipulated, there will be times when a heavier machine will sink so far into the mud as to be useless, moreover causing much damage to the roads. More dissatisfaction with mechanical hauling outfits seems to be due to this cause than to any other. A number of small units constitutes a more flexible train than a few larger and heavier ones: if the trip includes steep hills, rendering necessary a reduction of the load, the dropping of a single wagon may be sufficient. If the original train comprised, say four or five wagons, the capacity will not be reduced to so great an extent as if one of two large wagons had to be dropped.

Reversible spreading wagons in three-yard capacity may now be obtained which are adaptable to either team or traction haulage. Considerable advantage would be attached to these, as, in case of breakdown of a tractor or bad condition of the roads, teams could be employed.

In one case we have noticed a large gasoline tractor hauling two large six-yard wagons. The average speed of this outfit running loaded or light is about two miles per hour. In addition to other disadvantages, the wagons are of the old non-reversible pattern. After having dumped the load, it is necessary in some cases to travel a thousand feet or more further along the road till a suitable place to turn is reached. On a slow moving outfit, this extra time taken would mean perhaps a quarter-hour or more added to the time of the round trip. Add to this the additional time necessary at the car or quarry, and it will be seen how large a part of the day may be spent in unproductive work, particularly if the haul is short.

Another factor in mechanical transportation which has already assumed important proportions is the motor truck. While its use as yet is confined largely to city streets, there is no reason to doubt that it will soon be found hauling materials for County Roads. Being more easily manipulated than steam or gasoline tractors with their accompanying trains of wagons, and being capable of travelling at twice or thrice their speed, the motor truck has a number of commendable features. Two five-ton trucks carrying say 3½ or 4 cubic yards could be made to do the work of a 20 h.p. tractor hauling 14 to 16 yards per trip. If desired, these two trucks could be separated and worked on different roads. This would be quite feasible where the length of the haul is short, and where an up-to-date loading device is used. A single truck can be made to do the work of about four teams.

To summarize then, to make a success of mechanical haulage, it is necessary to make a careful selection of machinery, to put it into the hands of competent and careful operators, and to so organize the work that the machinery shall be kept in continuous service. If these conditions are fulfilled, there can be no question of its economy: otherwise, through the use of unsuitable equipment, and delays through breakdowns and intermittent work, the cost may exceed that of team-work, which, whatever else may be said of it, may usually be expanded or contracted to suit immediate requirements, thus keeping the cost per yard-mile fairly constant for any given set of conditions.

Crushers.

The usual practice on County Road work is to crush stone and place it directly on the road. In this way the crusher and roller are expected to work together, the roller consolidating and finishing the stone as it is brought from the crusher. Economical practice requires that the stone be rolled and finished immediately after being placed on the road. If only half-rolled, traffic is certain to undo a large part of the work by loosening and scattering the stone. The amount of stone which a roller can consolidate and make into finished road in one day is limited to a fairly definite quantity, usually from 60 to 100 cubic yards, depending on the quality of the stone, width and depth of metal, condition of the subgrade, ability of the engineer, etc. Obviously, to supply more stone to the road each day than the roller can finish, is to encourage partly finished and generally

Wentworth County—Stone-crushing Outfit. Observe wagon boxes, holding one-half cord or two and one-third cubic yards.

unsatisfactory work. For this reason it is inadvisable to employ a crusher whose daily capacity is much greater than the finishing capacity of the roller. A crusher capable of crushing up to 100 cubic yards per day has been found the most satisfactory. There is, however, a tendency on the part of some manufacturers to overstate the capacity of their machinery or to offer a crusher of too small capacity in an attempt to compete in price. Their claims should be investigated before being accepted. Any surplus over the roller's capacity should be stored for future use. This storage pile should be situated conveniently near the road and may later be used for maintenance purposes, or it may be used to keep the outfit working in case of breakdown to the crusher.

Needless to say, the crusher should be worked to its capacity. This capacity may be largely increased by intelligent operation. The jaws must be kept full. The size of all stone fed must be such as to permit it easily

to enter the jaws. More time is lost through having to break large boulders in the jaws than is generally imagined. Besides, the breaking of rocks with a heavy sledge is bound to have a detrimental effect on the machine. When setting up for work the crusher should be blocked up on timbers. In spite of what manufacturers may say, a crusher will *not* work efficiently when resting only on its wheels. The vibration will cause the axle bearings to wear, making the outfit draw heavier on the road. All heavy machinery must, for its own sake, if for no other reason, be supported as rigidly as possible.

Special attention must be given to lubrication. Fortunately there is no intricate mechanism about a crushing outfit to get out of order, but the strenuous conditions under which it is working require that it be accorded reasonable treatment. Oil must not be stinted, neither need it be wasted. Automatic oiling de-

Wellington County—A "Statute Labour" Load of Gravel, about half a cubic yard.

vices, owing to the dust, have not been found reliable, the best results being obtained by frequent applications to the bearings in small quantities, from an ordinary oil-can. All openings used as oil-holes should be kept closed in order that as little dust as possible may penetrate the bearings. Judgment must be exercised in the selection of oil. For hot weather, a heavier grade should be used than when the temperature is low. When operating in cold weather, special care should be taken to obtain a grade of oil which retains its fluidity.

In spite of every care taken, crusher bearings are subject to heavy wear. In selecting an outfit, one of the main points to be considered is the ease with which bearings and other wearing parts may be replaced. A number of manufacturers now supply replaceable babbit bearings, which fit into machined seats, and which may be changed in a few minutes. This is a great advance over the old method

of having to line up the shafts and renew the babbit by pouring. Another factor concerning a crusher's output is the condition of the jaw plates. These as usually supplied are of chilled cast iron, which wears rapidly. In spite of a much higher cost, jaw plates of manganese steel are more economical and owing to their durability give a more uniform product.

The selection of screens for separating the crushed stone into different sizes is next in importance. For roadwork a portable bin with bucket elevator and rotary screen is indispensable. The rotary screen should consist of two sections, giving three sizes of stone. For use with limestone the perforations in the screens should be 1¼-inch or 1½-inch and 3-inch respectively. The sizes thus obtained will be best adapted for road construction. The over-size or tailings, i.e., that stone which passes out the end of the screen, may be used for the bottom course, the one to three inch stone for the second course, and the small size including dust for the binding coat. For granite or trap rock the screen perforations should be 2½-inch and 1-inch respectively. A bad practice, which has occasionally been observed, is that of using three sections in the screen with perforations ¾-inch, 1½-inch and 3-inch. This gives a size of stone, ¾-inch to 1½-inch which, when used alone, is more detrimental than useful in a road surface.

Rollers.

In the selection of a roller, in addition to the statements and claims of the various salesmen, there are a number of points which should be considered, and on which the decision should be based. First, as regards weight for ordinary country roadwork, a 12-ton roller is sufficiently heavy, and this weight should never be exceeded. There are a large number of cases, particularly where the subgrade is not firm, where a 10-ton roller will do better work than a heavier one. Where used on old gravel or stone roads which usually furnish a firm subgrade for the new road, the 12-ton roller will be satisfactory. Where the roads have not been previously metalled, the 10-ton size is usually preferred, since a heavier machine tends to disturb the subgrade to such an extent that the stone cannot be properly consolidated. The lighter size also has the advantage on bridges whose ability to carry a 12-ton roller would be doubtful.

The relative merits of steam and gasoline have been considered in connection with traction engines. The same apply to rollers, and should form the basis for the selection of a suitable motive power. In the case of steam, the double cylinder engine is now universally accepted as the only satisfactory type. In addition to its smoother running qualities, it possesses the advantage of starting from any position, doing away with the old troublesome dead-centering. This advantage is most marked when the roller has dropped into a hole or is labouring to get out of a ditch. It is often necessary with a single cylinder engine to reverse the engine in order to get a start, and this usually has the effect of putting the roller further into difficulty. The cross-compound engine supplied on some rollers of English manufacture possesses the same advantages together with the additional ones of being more economical of steam and of permitting live steam to be turned into the low pressure cylinder when extra power is required.

A roller having a low centre of gravity, that is, having the boiler as low on the axles as possible, will be more stable on highly crowned roads, and on earth shoulders in slippery weather. The overturning of a road roller is, fortunately, not very common, but such accidents have occurred. The tendency to capsize on

a steep side grade is much greater with a machine whose centre of gravity is comparatively high.

Ease of manipulation should be specially noted, and in this connection the opinion of some one who has had actual experience with various rollers would be valuable. There is as much difference in the convenience in handling the various machines as there is in their design and general appearance. The throttle lever, and numerous valves and levers for steering, boiler-feeding, dumping the grates, emptying the ash pan, throwing the scraper brackets in and out of gear, etc., should all be within easy reach of the operator. In no case should he be required to leave his position on the tender to perform any of these common operations. An easily handled machine makes a satisfied operator.

As the roller is the most expensive item in the road-making outfit, it should be made the limiting factor of the organization, that is, the roller should be worked to its limit, and the other parts of the organization such as crushing of stone or delivery of stone in cars and hauling on the road should be regulated to suit the capacity of the roller. It should be kept busy but should not be crowded so much as to cause the roller-man to shirk his work and give the stone less rolling than good construction demands. Since the efficiency of the roller depends largely on the ability of the man in charge, it will be well to find the very best man for this work, even at a much higher wage, than a poorer one. It is possible through poor firing to waste as much as 50 cents worth of coal in a day. Add to this the damage which may be caused by ignorance or carelessness, and it will be seen that the incompetent man is the expensive man. And, above all, the extra work which can be done by an intelligent man who studies his work and who tries to apply the principles upon which good rolling is based, will show him to be the more economical. Many roller engineers are taken from the ranks of threshing engine operators. Their knowledge of the engine itself is usually fairly good, and most of them can be trusted to take care of it. Their great disadvantage lies in their ignorance of the best methods to be employed in consolidating stone with the least work. This is largely a matter of education and experience, and the superintendent should see that every man placed in charge of a road roller is instructed in the fine points of the work. This can be done only by a practical demonstration right on the job by an experienced man. The supply of first-class engineers is far below the demand; therefore the breaking-in process is the only one available in the majority of cases. The man is generally willing to follow the correct methods, but, not knowing them, he is hardly to be blamed for following such ideas as he possesses, and for failure to produce the best results. For example, the correct practice, as almost universally recognized in rolling stone is to start wherever possible at the edge of the material, and to work toward the centre, but time after time we see rollers starting in the middle of the stone and working outward, in many cases loosening on one trip the stone that was partly consolidated on the previous trip, not to mention the longer time required to consolidate, and the flat crown, which is a sure result of such methods. Asked as to his reason for doing the work in this manner, he is almost sure to reply that he has never been instructed otherwise. Improper methods and insufficiency of rolling are responsible for most of the flat, ravelled and otherwise unsatisfactory so-called macadam roads we so often meet.

Since the roller is to be the limiting factor, it is important that we keep up its efficiency in order that the work may proceed at a constant rate; to this end

special attention must be paid to the condition of the machine. It must be kept in first-class state of repair. Any small breaks, or damage of any kind, tending to lessen its efficiency, must be promptly made good. Worn wheels are a common cause of decreased capacity. To do good work, the rear rolls must have a straight surface. After they have become rounded, consolidation becomes much more difficult, and requires long rolling, being generally inferior in the end. The number of seasons or the number of miles which a pair of roller wheels will last, depends on the original hardness of the iron in them, the hardness of the stone rolled, etc. It is well, in selecting a roller, to keep in mind this necessity for renewing the rolls. Some rollers are so constructed that the hub and spokes of the rear wheels are detachable from the rims, rendering it necessary to purchase only the rims.

In order to keep the fuel consumption as low as possible, and reduce risk of burning, the boiler must be kept clean. As it is not always possible to obtain a supply of clean feed water, it will be necessary to clean out the boiler at intervals. This should be done at every opportunity. The roller engineer should be given positive instructions from the superintendent to wash out his boiler at regular intervals, depending upon the quality of the water, even if he has to work overtime to do it. The most effective method of washing the boiler is by means of a short piece of hose, used in connection with the hand-pump usually found on the water cart. With the assistance of a man to operate the pump the washing can be accomplished in a few minutes and the boiler left perfectly clean.

The test of an engineer is usually found in the condition in which he keeps his machine. A roller covered with dirt and grease indicates a slovenly engineer or a waste of lubricants—often both. A man who takes no pride in the outside appearance of three thousand dollars' worth of property left in his charge will hardly be the one on whom can be placed the responsibility of keeping it in a state of maximum efficiency.

Almost, if not quite as important as care of machinery in operation, is its care when not in use. A winter's exposure to the elements will cause greater deterioration than a whole season's legitimate wear. More attention, therefore, to its protection during the winter months will result in longer life. The smaller machines and implements, or graders, water tanks and wagons, may be stored in a vacant barn or driving shed. If such a shelter is not available for rollers and traction engines, they may be completely closed in with rough lumber at very slight cost.

COST KEEPING AND ACCOUNTING.

W. Huber, Assoc. Mem. Can. Soc. C.E.

That the County Engineer or Road Superintendent should be a permanent official is unquestioned. The increasing value each year of his services to the county is due chiefly to the experience gained in his work, and the longer he is so engaged, the greater and more valuable will be his experience. It will be still more valuable, if, during the time when it has been accumulating, he has kept accurate records of costs and methods to which he can refer at any time. One of his most important, though too often neglected duties is, therefore, the keeping of such records in connection with his work, as will enable him to furnish any information required later, particularly in the matter of costs.

Much has been said of the contractor's ability to work more cheaply than, and in many cases to underbid, the municipality. This is largely due to the contractor's close attention to details, his method of keeping records, and his employment of such a system as will enable him to ascertain costs of the various parts of his work during progress. He knows at once if his work is being done at a cost within his estimate, knows what portions, if any, are costing more than they should, and is given an opportunity to check, immediately they come to his notice, any loose or wasteful methods. One of his greatest assets lies in his records of previous work. Confronted with a job of grading, excavating, hauling material, or structural work, he is probably able to turn up cost records of similar work and from them to tell almost exactly what the proposed work will cost, thereby reducing the amount which it is usually necessary to add to an estimate under the head of contingencies.

A slight difference in operating costs means much more to a contractor who is spending his own money, than to a municipal official who is handling other people's. Take for example a difference of one per cent. in the cost of a given piece of work. To the municipality employing day work, this represents exactly one per cent. of the expenditure, and is comparatively unimportant. But to the contractor working on a net profit of say ten per cent., this difference of one per cent. in the cost represents about ten per cent. of his profits—a very considerable amount. By giving the work the same attention as a contractor would give it, by copying his methods and by insisting on the same degree of efficiency from employees, the County Engineer or Road Superintendent should be in a position to do his work as cheaply and as efficiently as the contractor, and in so doing, save for his municipality the money which would otherwise constitute the contractor's profit.

The success and economy of road construction is entirely a matter of efficiency —efficiency in the handling of machinery, the direction of labour, individually and collectively, and the selection of suitable materials. Efficiency in a mechanical sense is defined as the ratio of the amount of energy delivered by a machine to the amount of energy required to operate it. In other words it is the work done by the machine, divided by the work put into it. Similarly, in broader terms, efficiency in roadwork may be described as the ratio between the final value of a road to a community and its cost. In the case of labour and machinery, the efficiency and economy of its direction and operation is determined by a consideration of its cost and the amount of work accomplished thereby. Efficiency as regards materials is determined by original cost, length of service, and cost

of maintenance together with a consideration of such abstract properties as cleanliness, noiselessness, dustlessness, etc., which cannot be valuated on a money basis. As the efficiency of a machine can be determined only by keeping records of its performance and the power consumed, so are records absolutely necessary in order to estimate or compare the efficiency of any road-building organization. The same remarks apply to materials used in the work. It is the purpose of this paper to discuss some of the simpler methods of record and cost keeping, particularly as applied to County Road construction, and to suggest such forms as may seem advisable to make the system easily understood and to give the systems in the various counties a suitable degree of uniformity.

The objects of an efficient though not necessarily elaborate system of cost keeping are many:—

(1) To enable the superintendent to prepare at any time either on completion or during progress, a detailed statement of the cost of each section of road built, showing the expenditure on each part of the work, as grading, culverts, cost of stone, labour, etc.

(2) To show while work is in progress the unit costs of various operations, as cost of quarrying or crushing per cubic yard, cost of excavation per cubic yard, cost of draining per rod, cost of hauling stone per yard-mile, cost of finished road per square yard or per mile, etc.

(3) To facilitate comparison of the performances of various foremen and gangs; to show where work is being done economically and where inefficiently; and to enable the Superintendent to recognize efficiency in some gangs and to take the necessary steps to produce it in others.

(4) To form a basis for estimating the cost of future work.

(5) To supply data for the preparation of the Road Superintendent's annual returns to this office, and to insure such data as will satisfy the requirements both of this office and of the Provincial Auditor.

One of the chief requirements of such a system is simplicity. As the Superintendent will have difficulty in himself furnishing all information required for the keeping of satisfactory records, he will be dependent for a considerable amount of it on his subordinates. For this reason, the system, especially in so far as it applies to the foreman, should be free from all complications and readily understood by a man of ordinary intelligence, at the same time furnishing all necessary information. Another requirement is that the information obtained shall be arranged in convenient form for future use. The great test of a system of this kind is the ease with which it works, and how it fulfils its intended purpose. The ultimate object, therefore, we must emphasize, is more than the mere collection of data; it is the putting into suitable form of all information collected, and making it immediately available.

The persons concerned in the proposed system are the Foreman, Road Superintendent and Treasurer, and it cannot be too strongly emphasized that success depends on each one and on all three. The Foreman's work should comprise the keeping of a time book for each section of road under construction, the making out of a suitable pay-list at regular intervals, and the preparation of a brief report to be submitted periodically to the Superintendent. The Superintendent's work will consist of classifying the accounts and pay-lists as they are submitted to him, endorsing each account with the number of the road to which it is to be charged, and the nature of the work on which it is to be applied. He will then make a list of these accounts on a distribution sheet and forward it

with the accounts for approval and passing to the County Road Committee. These distribution lists, if properly made out, will give all the data necessary to a complete analysis of the year's expenditure. In addition to classifying accounts, the Superintendent will also file the weekly reports received from his foreman and will arrange the data contained therein in such manner as to be available for convenient reference. The County Treasurer's work will be the posting of the expenditures as shown on the distribution sheets which will have been forwarded to him from the road committee after approval. He will open a separate account for each section of road built during the season and will keep the accounts in such a way that he will be able to tell at a glance the amount spent during the season on the entire system, on any one road, or on any one part of the work of each road, as grading, culverts, cost of stone, labour, etc.

In order that the work involved may be reduced to a minimum and that the systems of the different counties may be as nearly uniform as circumstances will permit, the use of printed forms should be made to as great an extent as possible. A little study in the preparation of these forms and in adapting them to their particular requirements will be well repaid in the ease with which they can be filled out and interpreted. The forms which it is suggested to use and which should, where possible, be standardized are:—

1. Time book.
2. Pay list.
3. Foreman's report.
4. Distribution sheet.
5. Special loose-leaf ledger page.

The usual attitude of the average foreman toward anything in the nature of an innovation is one of hostility. To his credit, however, be it said that once he is convinced of its worth, he becomes its advocate, and his opposition ends. In the introduction of new methods of time-keeping, therefore, the Superintendent's first and hardest task will be the thorough instruction of all the foremen in the few principles concerned. The work will be much lightened if the foreman is given to understand at the very outset that he himself is a part of a system or organization, and that on him depends to a considerable extent the success of the organization. By thus stimulating his interest, better results can be obtained than by the more unpleaasnt method of compulsion. Since the average foreman has not been favoured with such education, it will require in some cases all of the school teacher's art possessed by the Superintendent.

The time book as ordinarily used shows only one thing, the actual time spent on the work by each man. It makes no attempt to show in what capacity he is employed or how his time is spent. In an improved system of cost keeping this latter is essential. A book has just been designed in this office specially adapted to County Road work, which embodies a number of new features, chief of which are:—

(1) Special provision has been made for distributing the time, i.e., showing exactly how much of each man's time is chargeable to each part of the work, such as grading, tile-draining, road construction, culverts, etc.

(2) The space for each day's entries has been considerably enlarged without increasing the size of the book. This will be appreciated by the majority of foremen whose stiff fingers and dull soft lead pencils are not adapted to fine clerical work.

(3) Double spaces for each day are provided so that if a man changes from one part of the work to another, the fact may be recorded and the proper proportion of his time charged to each part.

(4) The dimensions of the book have been kept down in order that it may be easily carried in the foreman's hip-pocket.

(5) Explicit instructions for using the book are printed inside the cover.*

The principal innovation in this new time book consists in indicating beside the daily entry of a man's time, by means of a symbolic letter, the part of the work on which the man has been engaged during the day. The main divisions of the work are enumerated in the instructions; others may be added or substituted as occasion demands. By this means, a man's time, no matter how often he changes his work, is accurately recorded, and this record forms the basis of a system of distributing the cost of labour, which may be put to a variety of purposes.

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* "INSTRUCTIONS TO FOREMEN." (Reprinted from Time Book).

The object of this time book is to show the exact time spent on each part of the work.

This book must be used only on the section of road designated on the cover.

A separate book must be kept for each section of road built. Where pay-lists are made out by the Road Superintendent, two books will be kept for each section, one book being in use while the pay-list is being prepared from the other.

This book will be used to record only labour and teams. Any materials or supplies purchased by the foreman must be charged on bills and submitted to the Road Superintendent in the regular way.

All labour performed on the County Road System will be recorded under one of the following heads, and must be shown in the time book accompanied by the small letter corresponding to that class of work.

g—Grading.
c—Culverts.
d—Tile draining.
q—Quarrying and crushing.
u—Unloading cars.
s—Hauling stone.
l—Levelling stone.
r—Rolling and sprinkling.
b—Bridges.
m—Maintenance.
x—Special work, not classified (to be explained by a note at the bottom of the page).

For example, a man's time will be shown as g—5, l—10, s—10, etc.

If a man or team changes from one class of work to another during the day, the time spent on each part of the work must be shown. This can easily be done, as the space for each day's work is divided into two parts. In this case the time will be shown as $\frac{s5,\ d3}{g5,\ g7}$, etc.

Under the heading "Distribution," show the total number of hours spent by each man or team on each part of the work. This will be done by adding all the time of each man indicated by a single letter. Use as many of the small spaces in this column opposite each name as may be necessary. These details may then be copied directly onto the pay-list.

NOTE.—Be sure that the total of the "Distribution" column is the same as the "Total Time" for each man.

When work on this section is completed, this time book must be returned to the Road Superintendent.

IMPORTANT.—If the foreman does not understand any part of these instructions, he must at once apply to the Road Superintendent for an explanation, as the success of the county's system of keeping accounts depends largely on the proper keeping of time books and the making out of pay-lists.

Road No. 12. Time Book for Two Weeks, Ending July 25 1914

NAME	Mon. 13	Tues. 14	Wed. 15	Thur. 16	Fri. 17	Sat. 18	Mon. 20	Tues. 21	Wed. 22	Thur. 23	Fri. 24	Sat. 25	Total Time	Rate	Amount	Distribution
F. Wilson Foreman	c10	c5 g5	g10	g10	g10	g10	l10	l10	l10	l10	l10	l10	120	30	36 00	c15 g45 l60
J. Smith	c10	c5 g5	g10	d10	d10	d6 g4							60	20	12 00	c15 g19 d26
W. Jackson	c10	c5 g5	g10	d10	d10	d6 g4							60	20	12 00	c15 g19 d26
L. Jones	c10	c5 g5	g10	d10	d10	d6 g4							60	20	12 00	c15 g19 d26
D. Perkins	g10	g10		d10		x10	l10		l10	l10		l10	80	20	16 00	g20 l40 d10 x10
W. Brown.	g11	g11	g11	g11	g11	g11	n11	n11	n11	n11	n11	n11	132	28	36 96	g66 n66
B. Myers.	g10	g10	g10	g10	g10	g10	l10	l10	l10	l10	l10	l10	120	20	24 00	g60 l60
J. Hall	g10	g10	g10	d10	d10	d6 g4	l10	l10	l10	l10	l10	l10	120	20	24 00	g34 d26 l60
S. Carter	g10	g10	g10	g10	g10	x10	g10	g10	g10	g10		g10	110	20	22 00	g50 x10 g50
W. Thompson	c10	c5 g5	g10	g10	g10	g10	s10	s10	s10	s5 n5	n10	n10	120	40	48 00	c15 s35 g45 n25
J. Avery	g10	g10	g10	g10	g10	g10	s10	s10	s10	s10	s10	s10	120	40	48 00	g60 s60
M. Wilkins	g10	g10	g10	d10	d10	d6 g4	s10	s10	s10	s10	s10	s10	120	40	48 00	g34 d26 s60
D. Hopkins	g10	g10	g10	g10	g10	g10	s10	s10	s10	s10	s10	s10	120	40	48 00	g60 s60
S. Marshall							g10	g10	g10	g10	g10	g10	60	20	12 00	g60
R. Harris							g10	g10	g10	g10	g10	g10	60	20	12 00	g60
P. O'Brien							g10	g10	g10	g10	g10	g10	60	25	15 00	g60
H. Allen							g10	g10	g10	g10	g10	g10	60	20	12 00	g60

Teams

X - building guard rail.

In this system there must be a separate time book for each section of road built. In cases where the pay-list is prepared by the Road Superintendent, two time books will be employed on each section and used alternately, one being in use while the other is in possession of the Superintendent for the purpose of making out the pay-list. A number of these time books have been printed to serve as models.

In order that the information contained in the time book may be permanently recorded, a new form of pay-list has been devised. In this pay-list the main feature is provision for recording the distribution of the time as shown by the time book. If the time has been properly distributed and the totals made up in the time book, the preparation of the pay-list will be simply a matter of copying from the time book. The column showing the time worked on each day of the month has been retained in compliance with the requirements of some auditors who demand that this be shown. In any case the distribution of each man's time must be given. The distribution on the pay-list is given under the same headings as in the time book. Provision is also made for showing the total cost of labour on each part of the work at the foot of the distribution column. This will be computed on the basis of each man's time and rate, and the total of these column footings should check with the total of the pay-list. In general these calculations should be made in the Superintendent's office, as it is not advisable to load the foremen with too much work of a clerical nature. A number of these pay-lists with complete instructions on the back have also been printed.†

By means of the system thus outlined, all labour on County Roads may be charged to that part of the work to which it belongs. The same should be done with all accounts for materials and other services not shown on the pay-lists. As in the case of labour, a little time spent in systematizing the passing, paying, and recording of accounts will be profitably spent.

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† "INSTRUCTIONS TO FOREMEN." (Reprinted from Pay-List).

No. 1.—The following instructions must be observed by foremen; any neglect or departure therefrom will cause unnecessary and annoying delay in the final settlement of accounts.

No. 2.—Foremen will keep a "Time Book," and from it will make out the pay-list in the following manner:—

In column 1, enter the name of each man employed.
In column 2, show how each man was employed, as "labourer," "teamster," etc.
In column 3, show by a mark thus, "1." the hours of each day on which each man worked.
In column 4, enter total number of hours each man worked.
In column 5, rate of pay per hour.
In column 6, total amount due each workman.
In column 8, under "Distribution of Time," show the total number of hours worked by each man on each part of the work, as recorded in the Time Book. Be sure to place these figures under their proper headings. Any work which does not come under one of these headings will be recorded in one of the blank columns at the right, and the work described at the top of these columns.

IMPORTANT.—Be sure that the total of each man's time, as shown in column 8, is the same as the total shown in column 4.

No. 3.—When paying the workmen, see that each man signs his own name in column 7, as a receipt for his money.

No. 4.—When the workmen have all been paid, and the list fully signed, this pay-list must be immediately returned to the Road Superintendent.

Wentworth

COUNTY ROAD SYSTEM

PAY LIST of Persons Employed on ROAD No. 12 SECTION Barton Tp.

From July 13 1914 to July 25 1914, Inclusive

No.	COL 1 NAMES	COL 2 How Employed	COL 3 HOURS OF EACH DAY AT WORK (1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31)	COL 4 Total Time	COL 5 Rate	COL 6 Total Amount	No.	COL 7 SIGNATURE	COL 8 DISTRIBUTION OF TIME: GRADING	CULVERTS	TILE DRAINING	QUARRYING & CRUSHING	UNLOADING CARS	HAULING STONE	LEVELLING STONE	ROLLING & SCRINKLING	BRIDGES	MAINTENANCE	Gauge Rail
1	F. Wilson	Foreman	10 10 10 10 10 10 10 10 10 10 10 10	120	30	36 00	1		45	15					60				
2	J. Smith	Laborer	10 10 10 10 10 10	60	20	12 00	2		19	15	26								
3	W. Jackson	"	10 10 10 10 10 10	60	20	12 00	3		19	15	26								
4	L. Jones	"	10 10 10 10 10 10	60	20	12 00	4		19	15	26								
5	D. Perkins	"	10 10 10 10 10 10 10 10 10 10	80	20	16 00	5		20		10				40				10
6	W. Brown	Roller Eng	11 11 11 11 11 11 11 11 11 11 11 11	132	28	36 96	6		66							66			
7	B. Myers	Laborer	10 10 10 10 10 10 10 10 10 10 10 10	120	20	24 00	7		60						60				
8	J. Hall	"	10 10 10 10 10 10 10 10 10 10 10 10	120	20	24 00	8		34		26				60				
9	S. Carter	"	10 10 10 10 10 10 10 10 10 10 10	110	20	22 00	9		50			50							10
10	W. Thompson	Team	10 10 10 10 10 10 10 10 10 10 10 10	120	40	48 00	10		45	15				35		25			
11	J. Avery	"	10 10 10 10 10 10 10 10 10 10 10 10	120	40	48 00	11		60					60					
12	M. Wilkins	"	10 10 10 10 10 10 10 10 10 10 10 10	120	40	48 00	12		34		26			60					
13	D. Hopkins	"	10 10 10 10 10 10 10 10 10 10 10 10	120	40	48 00	13		60					60					
14	S Marshall	Laborer	10 10 10 10 10 10	60	20	12 00	14					60							
15	R. Harris	"	10 10 10 10 10 10	60	20	12 00	15					60							
16	P. O'Brien	Crusher Engr	10 10 10 10 10 10	60	25	15 00	16					60							
17	H. Allen	Laborer	10 10 10 10 10 10	60	20	12 00	17					60							
18							18												
19							19												
20							20												
21							21												
22							22												
23							23												
24							24												
25							25												
26							26												
27							27												
28							28												
29							29												
30							30												
								TOTAL COST	155.78	19.50	33.20	61.00		86.00	50.00	28 48			4.00

NOTICE TO FOREMEN—Read CAREFULLY the instructions on the back of this Pay List. THEY ARE IMPORTANT

TOTAL $ 437.96

CERTIFIED CORRECT Fred Wilson.
FOREMAN

APPROVED
COUNTY ENGINEER (OR ROAD SUPERINTENDENT)

WENTWORTH COUNTY ROAD SYSTEM

Distribution of Accounts

This form is to be attached to every pay list, or account, or series of accounts, before payment is authorized.

NO.	PERSON OR FIRM	SERVICES, MATERIALS, ETC.	HOW CHARGEABLE	AMOUNTS		TOTAL OF ACCOUNT		REMARKS
1	Pay-list No. 11 --F. Wilson.	Grading	12--Barton Tp.	155	78			
		Culverts	" "	19	50			
		Tile Drain	" "	33	20			
		Labor- Road Surfac	" "	225	48			Includes Quarrying and crushing hauling and levelling stone and rolling.
		Guard Rail	" "	4	00	437	96	
2	Jones Hardware Co.	Material-Culverts	14--Beverly	24	75			Cement
		Tools	General	6	30			Shovels
		Material-Guard Rail	12 Barton Tp.		50			Nails
		Fuel,Oil,etc	" "	3	40	34	95	Lubricating oil and waste.
3	Standard Supply Co.	Fuel	14--Beverly	13	50			Coal
		Material-Culverts	12- Barton	28	75			Concrete Tile
		" Guard Rail	" "	19	65	61	90	Lumber and Posts
4	Hamilton Foundry Co.	Machinery Repairs	General			10	50	Grates for roller

Dated at Hamilton this 28 day of July 1914.

Certified Correct

County Road Superintendent

All accounts should be submitted to the Road Superintendent, long enough before the regular meeting of the Road Committee to allow him to classify and distribute them. A distribution sheet similar to the one in use in this office will be found of service. On this sheet will be recorded the following information:—

Person or firm submitting the account.

The class of work to which the account or part of account is to be charged (culverts, tile draining, road surface, etc.).

The road section on which the expenditure is to be made.

The part of each account (where the account is chargeable to more than one class of work or more than one road section) chargeable to each class, or road section.

The total of the account.

The account may usually be charged to one of the following classes of work, and should be so designated in the proper column in the distribution sheet:—

Grading.
Draining:
- Material.
- Labour.

Culverts:
- Material.
- Labour.

Road Surface:
- Material.
- Labour.
- Fuel, oil, etc.
- Contract.

Bridges:
- Material.
- Labour.
- Contract.

Maintenance:
- Material.
- Labour.

Miscellaneous.

The ledger page, to be described later, will be divided into columns having these headings, and the Treasurer's work of posting into the ledger will then become only a process of copying from the distribution sheet.

Pay-lists will be recorded on this distribution sheet in the same manner as accounts. If a pay-list or account contains items chargeable to more than one section of road, or to more than one class of work, the account is to be divided so as to show the amount chargeable to each section or to each class of work. By supplying these details respecting each amount, the Road Superintendent is virtually instructing the Treasurer as to the posting of that account in his ledger. This distribution sheet, which should accompany each and every batch of accounts, will give the Treasurer all information necessary to a proper keeping of the County Road accounts, and will enable the Treasurer and Superintendent to prepare, independently of each other if necessary, at the end of the year's work, reports on the year's expenditure which will be identical.

Thus far the information and data recorded in time book, pay-list and distribution sheet, has been for short intervals only, that is for the period covered

ROAD No._____ SECTION_____

Date	Account	Grading	Draining		Culverts		Road Surface				Bridges			Maintenance		Miscellaneous	Total	Cheque Number	Remarks
			Material	Labor	Material	Labor	Material	Labor	Fuel, Oil, Etc.	Contract	Material	Labor	Contract	Material	Labor				

Ledger Page—A Separate Account to be kept for each Section of Road Built.

GENERAL ACCOUNT

Date	Account	Tools, Etc.	New Machinery	Machinery Repairs	Superintendence	Office Expenses			Total	Cheque Number	Remarks

Ledger Page—A General Account to be kept for Expenditures chargeable to the Work as a Whole.

_ _ _ _ _ _ _ _ COUNTY ROAD SYSTEM.

FOREMAN'S REPORT

for period beginning_ _ _ _ _ _ _ _ 19__, and ending_ _ _ _ _ _ _ _ 19__, both days inclusive.

	ROAD no	LOCATION OF WORK	TIME		LENGTH OF WORK FINISHED	CULVERTS		STONE CRUSHED	STONE UNLOADED FROM CARS	STONE OR GRAVEL HAULED		SUPPLIES PURCHASED OR RECEIVED		
			MEN	TEAMS		KIND	SIZE					COAL OR GASOLINE	OIL	TOOLS, ETC.
Grading														
Tile-Draining														
Culverts														
Quarrying & Crushing														
Unloading Cars														
Hauling Stone or Gravel														
Spreading Stone														
Rolling & Sprinkling														
Maintenance														
Bridges														

DELAYS

DATE	DURATION	CAUSE

REMARKS

_ _ _ _ _ _ _ _ _ _ _ _
Foreman

by a single pay-list. The next step in recording costs is to re-arrange this information in such a way as to show the expenditure on each piece of work, and the total of such expenditure up to any given time. For this purpose it will be necessary to open an account in the ledger or account book for each separate work, and to have this account divided into heads corresponding with the details supplied on the distribution sheet. The various headings suitable for this form have already been outlined, and if care has been taken in the preparation of the distribution sheet, the work of the Treasurer is reduced, as has been said, to that of copying from the distribution sheet into the column designated.

To make the system of cost and record keeping complete, two other forms are suggested; a daily memorandum book for the foreman—a diary, so to speak, in which he may keep a record of his work, and a report form to be filled out at regular intervals, preferably to cover the same period as the pay-list, and submitted along with the pay-list to the Superintendent. Since the information asked for in the report is a summary of that collected in the memorandum book, the preparation of this report will be accomplished largely by copying.

The object of the diary, in addition to forming the basis of the periodical report, is to enable the foreman to keep an accurate record of his work and have it constantly with him for reference. The facility with which he will be able to compare one day's work with another's should be an important factor in producing increased efficiency. This book, if desired, could be incorporated as a separate section of the time-book, the one book then showing for each day how the time of the gang was spent and the amount of work done. The necessity for regular daily entries should be impressed on the foreman. If the report is submitted with, and made to cover the same period as the pay-list, the Superintendent will have all the material necessary for conveniently calculating any unit costs which he may require.

The utility of the system as here outlined may now be more fully comprehended. At the end of the year by a process no more difficult than the adding of a number of short columns, the Treasurer or Superintendent may produce a detailed statement of the cost of each part of the work. It is not necessary even to wait till the end of the season, the same information being just as easily obtained at any time during the year. All information ordinarily required, e.g., the cost of grading, culverts, road material, labour, fuel consumed, etc., may be obtained in this way. Unit costs and other detailed information may be obtained from pay-lists and report sheets, and may be recorded according to the Superintendent's own ideas. Finally, the labour of preparing the annual statement, which has heretofore been the horror of more than one Superintendent, will be eliminated.

It may be argued that the details of this system are too intricate for some foremen. This may be so in a number of cases, and educational steps may frequently be necessary. The organization of the Office of Public Highways of Ontario is, however, at the disposal of those who require assistance, either in the instruction of officials or in the preparation of a system similar to the one outlined, but perhaps more in accordance with local conditions in any particular county.

FOREMAN'S DAILY MEMORANDUM FROM_____19___ TO_____19__

	MON.	TUES.	WED.	THUR.	FRI.	SAT.		MON.	TUES.	WED.	THUR.	FRI.	SAT.	TOTALS
Date														
Weather														
Hours of Men														
Hours of Teams														
Length Graded														
Length Tile-Drained														
Culverts - Kind														
" - Size														
Stone Crushed														
Stone Unloaded														
Stone or Gravel Hauled														
Length of Road Finished														
Supplies Purchased or Rec'd — Coal														
Supplies Purchased or Rec'd — Gasoline														
Supplies Purchased or Rec'd — Oil														

DELAYS

DATE	DURATION	CAUSE

Other Information - Location of Work, Tools purchased, Etc.

BRIDGES AND ABUTMENTS.

Arthur Sedgwick.

The subject of bridges and abutments, while being of special interest to civil engineers engaged in municipal work, must of necessity interest Road Superintendents and municipal officers generally. The engineer is naturally more particularly interested in the technical points of the subject, while other municipal officials are interested in the final results obtained, namely, the completed bridge. It will, therefore, be necessary to confine my discussion so as to bring my remarks within the comprehension and interest of all municipal officials alike.

It is customary for a municipality, when having a bridge built, to stipulate that the structure shall conform to certain specifications. Only too often such specifications have been regarded merely as a means of ensuring that the structure will carry the required load safely. Closely connected with the idea of safety, however, is that of durability, which, while often lost sight of by municipal councils, is of equal or greater importance than mere safety. A steel bridge is subject to the effects of decay and usage or what is generally called wear and tear, in the same way as a wooden one for instance. A structure intended to carry a load of say ten tons may carry for some years a load of say fifteen tons with a reasonable degree of safety; but it may be so lacking in material, workmanship and protective covering of good paint that its life will be only half that of a scientifically built structure costing very little more.

Modern framed structures consist of a number of separate parts or members, each of which has a special function to fulfil. The first function of the specifications is, therefore, to ensure that the separate members composing the structure will be so fashioned and designed that they will fulfil their requirements with such uniform efficiency that the whole structure will have a reasonable life commensurate with its initial cost without a series of unnecessary and costly repairs as the years go on.

Ordinary timber bridges built by municipalities in former years were generally built with one idea in mind, namely, to withstand the action of decay; the stresses existing in the various pieces or members were seldom investigated, the only effort made being to make the members of such size as experience showed would carry all probable loads and in addition would be large enough to resist decay for a reasonable length of time.

The second function of a bridge specification is to provide a uniform basis on which a municipality can invite tenders from contractors to build the bridge. Even at the present time it is the custom of many municipalities when letting a bridge contract to place the whole matter, including sometimes even the plans for the abutments, in the hands of some favourite bridge company, or when they call for tenders, to allow each tenderer to furnish his own plans and specifications, the only stipulation made being the dimensions and capacity of the bridge. In some cases it is stipulated that the bridge shall conform to the specifications of the Ontario Government: but even in this case, the carrying out of the contract is generally left to the integrity of the contractor.

Since it is impossible for councillors and other municipal officers to judge of the merits of a steel bridge in the same way as they could with timber bridges, is is, therefore, necessary, in order to secure the best results, to employ the services of a competent engineer experienced in bridge work.

The result of the engineer's efforts may not always be apparent at first to the unpractised eye and perhaps this is the reason why municipalities are slow to adopt his services; but it should be borne in mind that the results he obtains will largely be shown in the superior life of the bridge and may not be manifest until the end of the bridge's life is reached, many years after it has been built and paid for, and consequently no longer in the public's mind. Of course, the engineer's work would ordinarily also show itself in a neater and more workmanlike appearance of the structure. And last, but not least, an experienced engineer may do much to keep the municipality free from unnecessary and unprofitable lawsuits. Of course, many municipalities may boast that they have got along without an engineer's advice and have been remarkably free from difficulties, such as last mentioned; but I feel sure that in many cases a minute inspection would show that the municipality had been badly imposed upon without knowing it.

Halton County—Concrete Bridge Constructed by Nassagaweya Township.

The engineer having been engaged by the municipality, his first duty is to inspect the site of the proposed bridge and make a survey of the same. It will then be generally necessary to make a careful inquiry into the nature of the stream and its surroundings, so as to determine the length of span required. So much has the country been denuded of timber, that in many districts and localities the water-courses are subject to freshets of ever-increasing intensity and frequency. In view of the present and probable future conditions, the engineer may or may not find it necessary to adopt a longer span than the old structure. In rare instances, a shorter span may be adopted with safety, thus resulting in the saving of a considerable sum of money, but this step should not be attempted except on the most reliable evidence obtainable in any case; great care must be exercised in reaching a conclusion in this respect. If the engineer

has lived in the locality for an extended period, his experience will do much towards affecting the decision he arrives at; but if not, he must rely largely on the evidence of the native residents and a close scrutiny of the surrounding country and of bridges existing above and below the one in question.

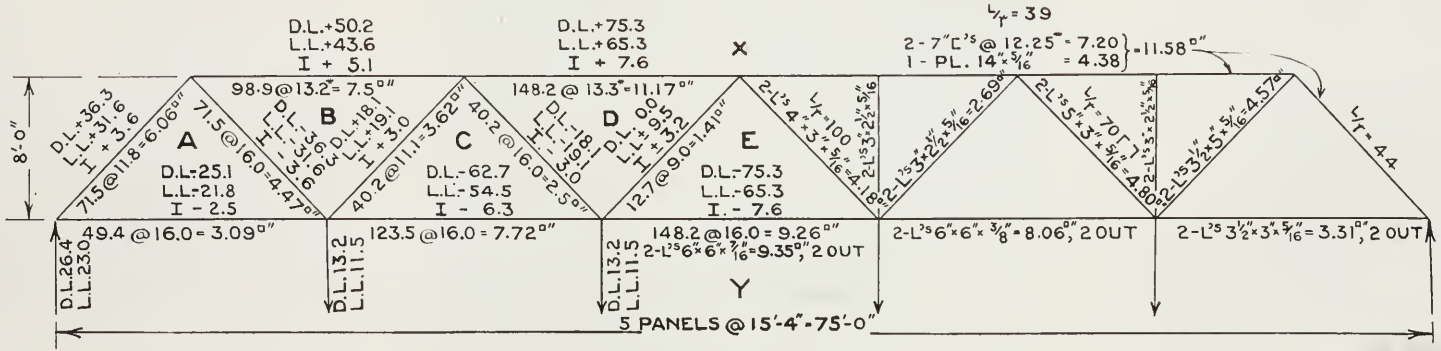
The engineer will next satisfy himself as to the nature of the soil upon which the abutments and piers, if any, will be founded and the nature of the current so far as it may affect the safety of the foundations. This last is important, as any disturbance of the established current by the insertion of piers and abutments in the channel may possibly set up a scouring action which formerly did not exist. Finally, he will make note of the available deposits of gravel or stone and the accessibility of the site from the most suitable railway station.

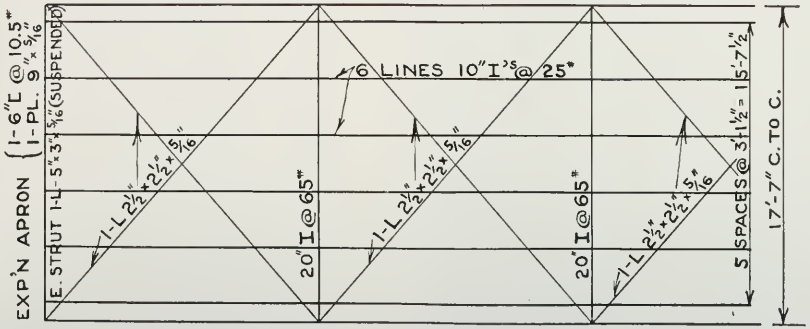
Lanark County—County Bridge near Fallbrook.

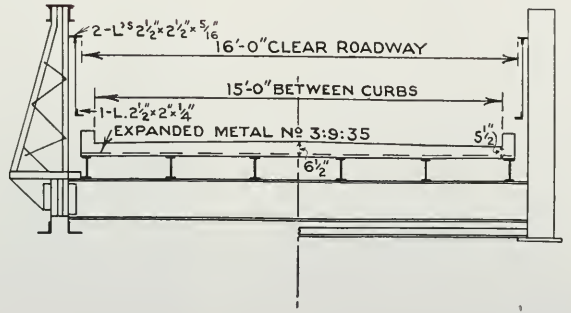
Having provided himself with the above data and the required capacity of the proposed bridge, the engineer is now ready to proceed with the design of the same.

Let us suppose the crossing requires a bridge 75 feet clear span between the faces of the abutments, and it is to carry a uniform live load of 100 pounds per square foot and a 15 ton road roller; the engineer will then proceed to design the bridge according to his own or some other standard specifications. If the bridge is one built by a county in Ontario, it must also conform to the specifications of the Ontario Government. We will also suppose that to be the case.

The bridge will have a driveway 16 feet wide between handrails and have a reinforced concrete floor 6 inches thick. By experience it is known that the







PLAN AND STRESS SHEET FOR 75 FOOT SPAN HIGHWAY BRIDGE.

weight of steel will be about 525 pounds per lineal foot of the bridge. Concrete ordinarily weighs 150 pounds per cu. foot, so that the weight of the concrete floor is 1,200 pounds per lineal foot. The sum of these is called the "dead load" and is equal to 1,725 pounds per lineal foot of the bridge or 862.5 pounds per lineal foot on each truss. The maximum live load at 100 pounds per sq. foot will be 750 pounds per lineal foot on each truss.

Since the clear span is 75 feet, the length "over all" may be taken at 78 feet. The dead load abutment reaction for each truss will, therefore, be 39 by 862.5= 33,600 pounds. Similarly the live load reaction will be 39 by 750=29,200 pounds.

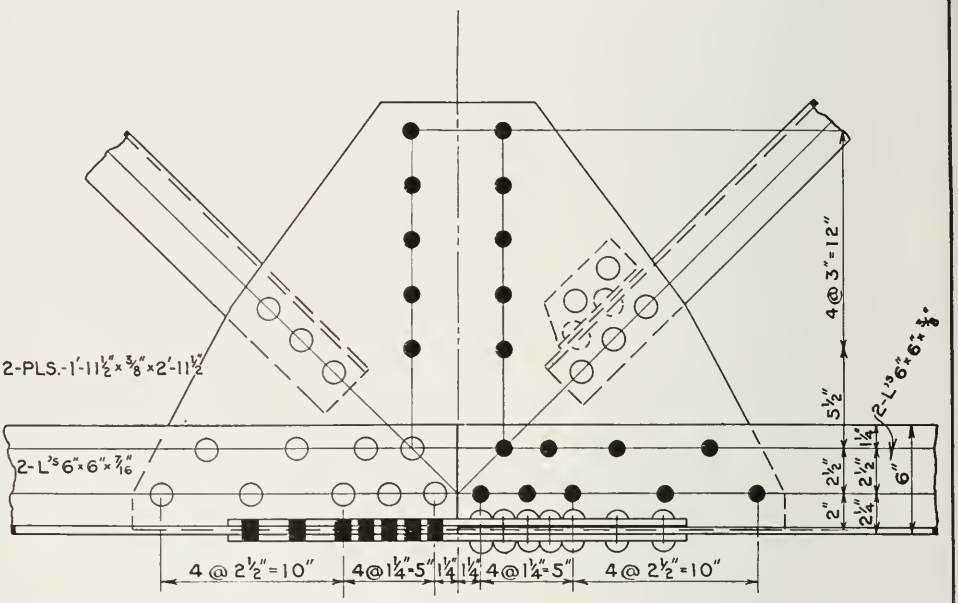
The impact allowance will be 0.25 by $\frac{29200}{33600 + 29200}$=3,400 pounds. The total load on each bearing plate will, therefore, be the sum of these and equals 66,200 pounds. The working stress for concrete being 500 pounds per square in., a bearing plate 132 sq. in. in area or 11 in. by 12 in. in. would be required. The details, however, will probably require a plate 16 in. by 18 in. It will set back from the face of the abutment 2 in. The length of span centre to centre of bearings will, therefore, be 76 ft. 8 in.

The usual style of truss for this length of span is a Warren or, as it is familiarly known, a pony truss. It will be made 8 ft. 0 ins. high, centre to centre of chords. There will be 5 panels each 15 ft. 4 in. long, centre to centre.

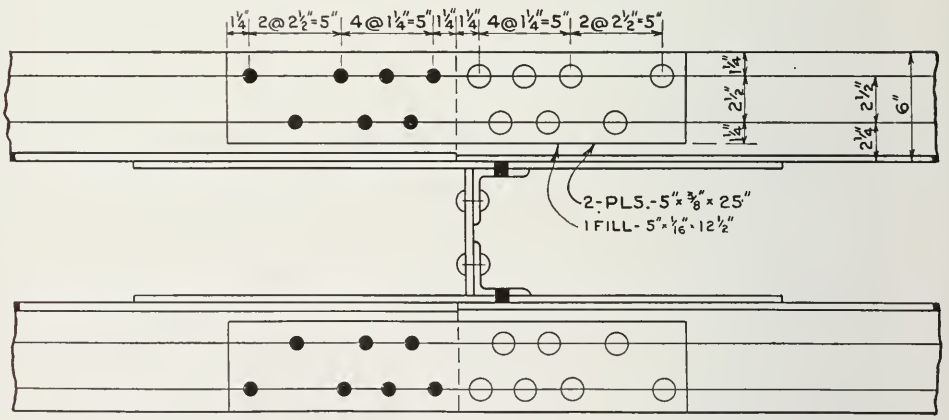
The engineer is now ready to compute the stresses existing in each member. This is done by means of that branch of applied science known as statics. The stresses existing in each member are set down and totalled up as shown. Having found the stresses, the engineer proceeds to design each member so that it will be strong enough to take care of the stresses existing in it. The make up of each member is as shown. It will be noticed that in the chords the stresses increase towards the middle of the bridge, while in the web the greatest stresses exist in the end members. The top chord and half the web members being in compression, these members have to be made stiff enough to prevent them from bending as well as crushing. The bottom chord and remainder of web members are in tension. They will, therefore, tend to tear apart across the rivet holes made to hold their ends together. They must, therefore, be made large enough to allow for the rivet holes punched in them.

The engineer having thus made the plans and drawn up the specifications for the superstructure, the municipal council is now in a position to invite tenders for the construction of the same. The bidders will then all tender a price for the same quantity and quality of workmanship and material which, without these plans and specifications, would not be the case.

In this case the engineer may conveniently use the Ontario Government General Specifications together with any extra clauses which he may deem necessary to cover the special requirements of this individual case. It is the practice in this country for the successful tenderer to make his own detailed plans of the steel work in the bridge, but in every case these plans should be closely scrutinized and receive the approval of the engineer before any of the steel work is fabricated. The connections for the several members of the bridge are just as important as the members themselves; but owing to the stress of competition and the rush in getting the drawings made, these connections are quite often slighted and a comparatively inferior bridge is the result. The practice of taking it for granted that these details are always satisfactory cannot be too strongly



ELEVATION.



PLAN.

JOINT C.D.E.Y.

condemned. The economical detailing of steel structures is one that requires very special experience and can properly be left to the bridge company to carry out, but in every case the plans should be submitted to the municipality's engineer to make sure that the efficiency of the bridge has not been sacrificed on account of a cheap design of its details.

As an example, a detail of the joint C. D. E. Y. is shown. The bottom chord on one side of the joint is composed of two 6 in. by 6 in. by 7/16 angles and on the other side two 6 in. by 6 in. by 3/8 angles. On the stress sheet it was stipulated that only 2 rivets were to be deducted from the chord section, one from each angle. The detail drawing, however, shows 4 rows of rivets in each angle. If the rivets were spaced opposite each other, 8 rivets would have to be deducted, but by spacing them far enough apart and "staggering" them so that the angle cannot tear apart on a zigzag line, only 4 would have to be deducted. This, however, is twice as many as we allowed for. To overcome this difficulty, the vertical splice plates are made longer than the horizontal plates. The first two rivets in each angle in the vertical splice plate transfer sufficient stress from the angle to the splice plate so that, when a region is reached wherein 4 rivets must be deducted, it can be done without over-stressing the metal. Near the ends of the members sufficient stress has been transferred to the splice plate to allow 8 rivets to be deducted as shown. In order that the stress in both legs will be as nearly equal as possible, two splice plates are used for the lower legs, thus putting those rivets into double shear. In this way the 7 rivets in the lower legs approximately equal the 10 rivets in the vertical legs.

Now, what I wish to point out is the fact that if the details are designed so that 4 rivets are deducted when only 2 are provided for when the main member is made up, the efficiency of the member is seriously impaired. When 2 rivet holes are deducted, the net area of the member is 9.35 sq. in., but if 4 are deducted there remain only 8.58 sq. in., which is a loss of 10 per cent. in efficiency. But this is not an infrequent mistake in bridge plans submitted to this office. Moreover, it frequently happens that both legs of the angles composing the member are far from being stressed equally, resulting in a still further loss in efficiency.

Now the strength of the bridge truss as a whole is only equal to that of its weakest part and, as I have already said, the life of a bridge is directly proportional to its strength. If, then, its probable life is reduced 10 per cent., the bridge has cost 10 per cent. too much. Bridge plans have come under my notice where such defects as I have pointed out amounted to much more than 10 per cent. As a first class engineer's services can usually be obtained for 5 per cent. of the cost, it does not require much figuring to see that money would be saved in the end by employing the best expert advice obtainable.

Coming to the design of the abutments and wing-walls, I may say the engineer meets with a variety of problems. Two types of abutments are now in common use, namely, plain concrete and reinforced concrete, but even with plain concrete work it is considered good practice to use steel reinforcement where the wing-walls join the abutment proper, there being a tendency on the part of the wing-wall to break away from the abutment at this point.

For abutments of ordinary height and where good gravel is easily obtainable at a moderate price, plain concrete is most often employed, as it is simpler to use, requires less expert inspection, and costs about the same as reinforced concrete work. Abutments constructed with reinforced concrete, however, require much less concrete and consequently much less cement and gravel than in the

former case, so that, where gravel is scarce and has to be hauled long distances or where the abutment is of unusual height, it may be found advisable for the sake of economy to use this style of construction in preference to the other.

The abutments of a bridge must fulfil two functions (1) to support the ends of the bridge and (2) to act as a retaining wall to hold back the earth fill forming the approach to the bridge.

The pressure of the earth filling on the back of the abutment wall cannot be computed with mathematical exactitude, but from the results of experience the general rule is to make the thickness of the wall not less than four-tenths of the height and extend the footings on all sides far enough to keep the pressure on the foundation within safe limits. It has been said that nine-tenths of all the recorded failures of retaining walls were due to defective foundations. It will be seen that since the earth filling has a tendency to tip the abutment over, the pressure on the toe of the wall will be more or less greater than that on the heel. This pressure will depend on the height and width of the wall and also on the character of the earth filling. It will be further increased by the weight of the wall and the weight of the bridge superstructure. It will also be seen that the bearing power of the different soils varies between very wide limits.

On account of the conditions just mentioned it must be admitted that, in order to secure an economical as well as a safe structure, considerable experience and judgment must be exercised by the engineer entrusted with the problem. I have seen bridge abutments built and designed by so-called practical men that had sufficient excess concrete in them to have paid for an expert engineer's services several times over. And the work could not even then be vouched for as safe, as subsequent events sometimes prove. On the other hand there are abutments built by the same class of men that are so flimsy that, though they may still be standing up, they, like the superstructure, cannot be considered safe and in any case will naturally show the effects of decay and disintegration much sooner than a more substantial structure.

In conclusion let me advise you that purchasing a bridge is like making any other purchase. Only the man who knows what he is getting—in other words, only an expert—can buy it "right."

TYPES OF COUNTRY ROADS.

Robt. C. Muir, A.M.Inst.C.E.

One of the chief requirements of our advanced civilization is Good Roads. This is proved by the growing demand for them. The excellence of the Roman roads still existing in various parts of Europe is direct proof of the high state of civilization to which the Romans had attained, and it is admitted that no more reliable evidence can be given as to the condition of a people than that evinced by the quality of their roads, experience teaching that social, industrial and commercial development depend largely upon them.

The importance of highways to the welfare of nations was not unknown to the ancients. The various governments of Greece bestowed much care upon them. The Carthaginians were scientific road-builders; they built up an empire prominent in military achievements and in the arts and industries of civilized life.

The Romans learned the art of roadmaking from the Carthaginians, and the roads constructed by them are great monuments.

The first Roman road was constructed under the direction of Appius Claudius, over 2,200 years ago, named after him "The Appian Way." Under Julius Cæsar the Roman capital was made to communicate with all the chief towns by paved roadways, and later a road was constructed from Spain through Gaul to the Alps. Still later these roads were extended through the various provinces of southern and western Europe, and carried on through England. The roadway is the most solid structure of its kind which has been built in any age. The engineering seems to have been very simple, as these roads are absolutely straight; the idea was to select landmarks in the direction desired, without regard to intervening obstacles. The location of these roads where known in Britain is shown on the Government maps. These roads vary in width from 8 to 20 feet and are 3 feet in thickness. The method of construction was as follows:—

1.—A trench was dug to the desired width and depth.

2.—The foundation, consisting of two courses of large flat stones laid in lime-mortar.

3.—A layer, 15 inches thick of broken stones, brick and pottery, mixed with lime-mortar, is then spread on.

4.—On this is laid the finished surface, composed of flat stones, 6 inches thick, set in lime-mortar.

This type of road is still to be seen in many parts of Southern Europe.

So much for the Roman roads; now let us come to roads of a more recent date.

Some 400 years ago the English Government passed the first Act relating to road improvement and various systems were carried out, one of which was the establishing of turnpikes, and something like 35,000 miles of such roads were constructed. The improvement was little better than the old roads, where the method of dumping stone wherever necessary was carried out. In fact, very little improvement was effected till the coming of MacAdam and Telford in the year 1815 or thereby. To these two men Britain owes her great system of roads, and, quoting Charles Dickens, "Our shops, our horses' legs, our boots, our hearts, have all been benefited by the introduction of MacAdam."

Now let us take up the method of construction as advocated by Telford and MacAdam.

Telford's idea in road-building was to provide a more solid foundation; the method of construction being as follows:—

1.—On a prepared flat subgrade, a foundation of hand-set stones, ranging in depth from 4 in. to 7 in., is laid, 7 in. stones placed in centre and 4 in. at sides, set on edge and firmly wedged with stone chips.

2.—On this foundation a 6 in. layer of broken stone (2 in. size) is spread and allowed to be rolled into position by traffic.

3.—On this is spread a 2 in. layer of smaller stone, the whole to be thoroughly compacted.

MacAdam was the first person to realize that drainage was an important factor in road-building, and that a well-drained and completed subsoil required less stone than had been formerly used.

MacAdam says that soil, which supports the weight of traffic, while it is preserved in a dry state, will carry any weight without sinking. A covering impervious to rain must be then placed over it. The thickness of a road should only be regulated by the amount necessary to form such a covering. MacAdam omitted the foundation course as shown in Telford method.

The method of construction was as follows:—

1—On a prepared subgrade a layer of broken stone, 2 inch size, was spread.

2—On this a layer of finer stone was spread.

3—This was rolled and compacted as well as could be with the available equipment. This had to be done with the use of horse-rollers, steam-rollers not being invented till 1860 or thereby.

Both Telford and MacAdam were in part correct in their ideas of the best preparation of the foundation, and the modern macadam road is a combination of ideas of Telford and MacAdam.

With the invention of stone crusher and steam roller, both of which came into use at practically the same time, around 1860, and improvements on other tools, the building of macadam roads has become more successful and economical.

Now let us take up the types of road that we have to deal with at the present time.

The most important feature of all types of road is the foundation. One may make the surface of the very best material procurable, but unless there is a good, sound, and well-drained foundation, it is of no avail.

The entire absence of foundation suitable for carrying modern speeds and weights is revealed by the upward movements of the sides of the roadway, and generally the annual expense of wear of surface will be increased. The first cost of providing a suitable foundation is heavy, but where a suitable foundation does not already exist, it is the only sound course to pursue, both from an engineering and financial point of view.

I have seen cases in Britain where large sums of money were spent yearly to provide a suitable wearing surface, on a weak foundation, but which was of very little good. The problem the engineers in Britain are up against in many cases is the weak foundation and not the surface, as people think in this country, and indeed I may say in some localities the foundation which was sufficient to carry the traffic of ten years ago is now being greatly strengthened.

Hence, let us all study more closely the foundation of road and the draining of roadbed.

Earth Roads.

The construction and maintenance of this class of road is of more importance than many people are aware of, particularly in parts of the country where money and good road materials are scarce.

An earth road with a soil composed of a mixture of sand and clay is much more satisfactory than one composed of either of these soils alone. A soil composed wholly of clay acts just the opposite from sand under different weather conditions. In dry weather the surface becomes hard, and if kept in proper shape, makes a good surface. In wet weather, the water soaks into the clay and softens it, with the result that the traffic cuts up the surface and makes the road almost impassable.

Where suitable soil is not found ready to use, it is advisable to use a mixture of sand and clay, mixing same on the road. The idea of a sand-clay road is that the voids between the grains of sand in the surface should be filled with clay.

The chief factor on an earth road, in fact all classes of roads, is proper drainage. If the surface of road is kept shaped so as to throw surface water to ditches and under-drainage used, there should be no difficulty in making this road passable at all times. A camber of 1 inch to the foot is usually sufficient.

The principal work in maintaining an earth road is to keep it smooth and well crowned. This is done by using the log drag. The log drag is essential to the upkeep of earth roads.

An earth road should not be dragged when dry. Should this be done, the surface crumbles up and causes a layer of loose material which quickly becomes dust and later turns into mud. The proper time to drag is when the road is wet; the muddier it is the better. The road shall be dragged at all seasons.

Gravel Roadway.

Gravel, though not as durable as crushed stone, has proved very serviceable as a road covering.

The subgrade for a gravel road should receive careful attention and must be prepared so that it offers a firm surface. The binding quality is the chief point to be considered in selecting gravel. Bank gravel is more suitable than stream gravel, as it contains more fine material which acts as a binder. Iron oxide found in some gravels is an excellent binder, and roads built of this material have given good results.

Gravel of this type is found in Middlesex County, where the gravel roads speak for themselves. Gravel should be screened so as to have surplus clay and loam removed; 15 per cent. of clay is all that is necessary to act as a binder.

There are two methods of construction, namely: (1) Surface method, (2) Trench method.

(1) The subgrade having been brought to proper shape, the gravel is dumped on roadbed and smoothed out, larger stones being raked to the bottom. The surface is then rolled until firmly compacted. This is the usual method of construction, and the material taken from ditches goes to form the shoulders.

(2) A trench is constructed in the subgrade of the same width as the gravel surfacing. Gravel is then spread on and compacted in layers. The material taken from the trench is spread on sides to form shoulders, which are compacted during final rolling.

Macadam Roadway.

This is generally called a waterbound macadam roadway and is built in nearly all countries.

In Canada this is the road that we must study minutely, as conditions will prove it to be the standard type of road for many years to come. As waterbound macadam roads develop traffic over them, there comes a time when surface treatment with bitumen is advantageous and satisfactory.

The modern method of constructing a macadam road is as follows:—

A trench is cut to the desired width of macadam surface, the bottom of which is parallel to the finished surface of the road. Here, again, the hard material taken from the trench is spread on the sides to form shoulders. Sod and earth should be thrown to the roadside.

Wellington County—Result of Drawing Earth and Sod from Shoulders to Centre of Road.

The subgrade should be thoroughly compacted with a steam roller, and weak places filled in with hard material.

The subgrade being prepared, a layer of 3 in. stone or tailings is laid thereon as a foundation course, then the stone graded to pass a 3 in. ring and retained by a 1½ in. ring is spread to the required depth, on this a thin coating of stone passing a 1½ in. ring, except dust, is spread to fill voids, the whole then rolled by a 10 ton steam roller. The screenings ½ in. to dust are then applied and thoroughly soaked with water and rolled. More screenings are added as desired and sprinkling and rolling continued until the road is thoroughly consolidated. A light coat of screenings is then spread on the finished surface. In rolling layers, care is to be taken not to roll too much so as to crush stone.

In finishing a macadam road, wet the surface until a wave of mud, a puddle in other words, forms in front of the roller; plenty of water is essential to build a good macadam road. Care should be taken, however, that water does not injure the roadbed. Above all do not roll the screenings dry.

The use of brooms is strongly recommended for finishing; this practice is very seldom carried out in this country. This is an essential point in macadam road construction. Two men are usually employed on this work.

The intention of sweeping the surface when water is being applied is to brush the screenings into the voids, thus helping the binding; also to avoid water lying along shoulders, which would otherwise soak into the roadbed.

Too much attention cannot be given to the spreading of stone, which really requires great care and skill, as the evenness of wear of the surface depends upon uniform spreading.

Telford Macadam Roadway

The telford foundation as constructed to-day is a great improvement on the method advocated by Telford some 90 years ago; in fact, it is more after Tresaguet's method.

This class of road, though very rare in Canada, has been extensively used as a foundation for suburban roads in Britain.

Now we, in Canada, have at the present time to pay great attention to the foundation of the road, and this method of building the foundation is one I would advise all present to study more carefully than has been done in the past.

The stones are set on edge by hand and wedged by chippings on a prepared subgrade, parallel to finished surface of road.

The stone used should not exceed 6 in. in width. The stone being laid on edge has not the same tendency to heave as when laid flat.

The projecting edges of stones above the surface are knocked off, the spaces between stones filled in, and the surface of telford blinded. The whole is then rolled with a steam roller. The crushed stone is then laid thereon and finished as in a macadam road.

Brick Roadway.

This class of road, though in use for over 100 years in Europe, has only quite recently come to be used in this continent, the first being laid some 25 years ago.

At first failures were numerous, these failures being due to poor foundation or the quality of the brick.

The advantages of brick pavements are:—

(1) Easily cleaned.
(2) Easily repaired.
(3) Makes traction easy.
(4) Good foothold for horses.
(5) Little dust and no mud.

The chief defects are:—

(1) The lack of uniformity in the brick.
(2) Noise.

The clay that the bricks are made from must be free from lime. There are various types of brick roadways: the type of road usually adapted for country use is one with concrete shoulders, and should be constructed in the following manner:

The subgrade having been thoroughly consolidated should receive, if of clay, a layer of cinders or gravel 6 in. thick. The concrete foundation is then laid 6 in. thick, this surface to be parallel to finished surface of roadway. At least four dry days should elapse before brick is laid thereon. A cushion of sand 1½ in. in thickness is spread on concrete to receive brick. The brick is then laid on cushion and rolled with a 5 ton roller. The bricks having been rolled to a perfect surface, the joints are then filled with cement grout, except the two longitudinal joints at shoulders and a transverse joint every 25 feet, which are filled with pitch and called expansion joints.

Bituminous Macadam Roadway (Penetration Method).

A bituminous macadam roadway is one consisting of broken stone and bituminous material incorporated together by penetration method.

Welland—Cross Street Before Improvement.

Before constructing a bituminous surface on a macadam road, all ruts and holes should be filled with a bituminous-coated stone to provide an even surface. All surplus dirt must be removed so as to expose the stone surface before bitumen is applied. Should the surface not be cleaned, or any cakes of dirt be allowed to remain, the bitumen will not penetrate into the macadam.

There are two methods of applying bitumen, viz.: gravity and pressure.

(1) The following mechanical appliances are used for the gravity method, viz.: pouring cans, hand-drawn distributors, tanks equipped with hose and various other appliances invented for the purpose. When using the appliance of tank equipped with hose, it is usually necessary to brush the material into the road.

(2) The advantages claimed for the pressure method over the gravity method, are: more even application, ability to distribute a small quantity per square yard,

economy in first cost, economy in long run, simplicity of operation and avoidance of expensive machinery, not to mention freedom of patent infringement claims.

In applying bitumen it is essential that it should be applied as hot as possible, and therefore should be heated right on the work.

The quantity of bitumen required will vary according to the physical conditions of the road, but generally 1½ gallons to the square yard is ample; for surface painting thereafter, ¼ gallon per square yard.

The method of construction is as follows:—The existing surface of macadam having been prepared and thoroughly dry, the bitumen is then applied, which is carried out by means of a pressure distributor attached to a special tank wagon capable of containing steam under pressure; said wagon is drawn by a steam roller, the boiler of which is connected with the tank wagon, furnishing the pressure on the bituminous material. A uniform layer of stone screenings is then spread on. The steam pressure applied is usually from 45 to 60 pounds.

Welland—Brick Pavement on Cross Street.

Bituminous Concrete Roadway (Mixing Method).

This consists of mixing with the stone a sufficient amount of bitumen; the mixing is usually done at a plant some distance from the work, but, if at all possible, should be done right on work. The materials are mixed in a heated state and may be done by hand or machinery for the purpose.

The treated material is then spread on and rolled, and then a flush coat of bitumen and grit, and again rolled.

The advantages claimed for this method by its advocates are: uniformity of surface and composition of same, maximum value of surface for materials used, and economy in use of materials. This method has proved capable of producing first class results, but there are instances of its utter failure.

The quantity of bitumen used in this method is 2½ gallons per square yard of surface.

The mixing method involves a considerable investment for machinery, and, with its initial cost, has led to the development of the penetration method.

Asphaltic Concrete Roadway.

An asphaltic concrete roadway is one having a wearing surface composed of stone and a bituminous material incorporated by mixing methods, similarly to bituminous concrete, except in grading of stone.

Where the traffic is exceptionally heavy, the asphaltic concrete is usually laid

York County—Lake Shore Road Before Improvement.

on a cement concrete foundation; but for ordinary traffic, a telford or macadam foundation is sufficient. Should a telford or macadam be used then a 1 in. binder is needed.

The method of construction is as follows:—The matrix, which consists of 1½ in. crushed stone, sand and asphaltic cement, having been thoroughly mixed, is applied in a heated state to the prepared surface of foundation and spread with iron rakes. This surface is rolled until properly compacted. A seal coat of heated bituminous cement is spread thereon, if possible while the surface is still warm, and spread with rubber squeegees. Very little of this seal coat is required, only sufficient to fill surface voids.

The top dressing is composed of stone chips or torpedo sand which is rolled into surface.

The proportions of materials should be: stone 55 per cent., sand 35 per cent., asphaltic cement 10 per cent.

Concrete Roadway.

The development of concrete roadways within recent years has been enormous, especially in the United States.

This is a class of road that is very largely in the public's eye at present and one requiring a great deal of study.

York County—Lake Shore Road with Concrete Pavement.
Electric Railway Tracks on the Road Allowance add seriously to the Cost and Difficulty of Road Maintenance.

There are two methods of construction: (1) one course, (2) two course.

(1) One course is constructed in the following manner:—The concrete is mixed in proportion, usually 1: 2: 4, and is laid to a compacted depth of 7 inches, on a subgrade, well compacted and well drained. Should the subgrade be of clay, a layer of cinders or gravel should be spread on same.

The surface of concrete is floated over with a heavy template. Each day's work is finished at an expansion joint, such joints being constructed every 30 feet or thereby.

(2) Two course method is constructed thus:—A layer of concrete 5 in. thick is laid on prepared subgrade. This having been shaped and compacted, and before it has begun to set, a wearing course 2 in. thick is laid thereon. This wearing course usually consists of a mixture of cement, sand and stone chippings in proportions 1: 1: 1, or may be of sand and cement.

Reinforcement is used in both methods and is placed near the bottom of concrete when subsoil is weak.

A wearing surface of bitumen and sand is now being used extensively on concrete roads, but here again we are up against patent infringement.

The concrete surface having been thoroughly cleaned and dried, the bitumen is applied hot by means of a sprinkler, and is evenly spread by using squeegees. This is then covered by a slight layer of sand. The quantity of bitumen used per square yard is usually ¼ gallon.

Tar Macadam Surfacing.

This is a method of surfacing used extensively in Britain within recent years.

The method I carried out while in Scotland was as follows:—

The stone was thoroughly dried and heated, care being taken not to overheat. While hot, the stone was mixed with tar, which contained 20 per cent. of best Mexican bitumen, in proportion of 8 gallons of tar to one ton of stone.

The size of stone used was 2¼ in. from which the best results were obtained. Opinions differ as to the size of stones to be used, some engineers holding that stones should be from 2¼ in. to ¾ in., so that all voids may be properly filled. This would be quite acceptable if it were possible to have stones so evenly mixed that a proper proportion of each grade would be evenly distributed in every square yard of roadway, but this perfect grading is seldom realized, with the result that the road surface is of unequal strength. This remark also applies to waterbound macadam roads.

The binding coat was composed of ¾ in. to ¼ in. chippings, which were also used for gritting the finished surface.

The existing surface was evenly raked and compacted; this surface to be perfectly dry.

On this a 4 in. layer of tarred stone was spread and rolled. Should the weather be very hot, light rolling should be supplied to get the stones into position; otherwise the steam roller may push the stones in front of it, causing a wavy surface. A sprinkling of tarred chippings was then applied, on top of which was spread a thin layer of clean, dry stone.

After the road had been opened to traffic for a few weeks, the surface was swept and painted with a prepared tar.

In conclusion, let me mention that one, if not the most, important factor in successful road construction is supervision; a good foreman is essential if work is to be carried out satisfactorily and economically. Weather has the most powerful influence on the breaking up of roads. This can be minimized by effectvie waterproofing.

A few points that should be observed in construction of macadam roads:—

(1) The removal from roadbed of all vegetable matter.

(2) Sub-surface drainage.

(3) Use of the very best material afforded by locality, and, if traffic calls for it, the importation of suitable material.

(4) Classification of stone, tailings down to ½ in.

(5) Complete exclusion of loam and clay from stones.

(6) Use of stone dust and screenings, same quality of stone used to fill crevices.

(7) Thorough consolidation of stone by using a 10-ton steam roller.

(8) Stone should be hard and tough, but hardness without toughness is of no use.

In using tar or bitumen, the following items should be kept in view:—

(1) The stones must be dry and heated.

(2) Top crust never to be laid on damp foundation, and work should be carried out in dry weather.

(3) Only a sufficient quantity of binder to be used.

(4) Tar not to be over-heated; if so, it has tendency to cause weakness.

(5) Heating and mixing of stones and tar to be carried out on work.

Tarry surfaces have a tendency to be slippery, but this can be overcome by a coating of gritty material.

It is advisable that all improved road crusts should be supported by a sufficient foundation, as the tendency is that the weight, speed and intensity of traffic will increase on roads.

BROKEN STONE ROADS.

Hugh A. Lumsden, B.A.Sc., Assoc. Mem. Can. Soc. C.E.

The subject of stone or macadam roads is perhaps the most interesting of those with which we have to deal during the present discussions. With highways, as with railways, there are various classes of road, each of which may adequately serve the purpose for which it is built. Traffic is the consideration which chiefly governs the selection of a particular type of road. Commencing with the graded earth type for many township roads, and following this with gravel, we come to the waterbound macadam road, of which type there have already been built in Ontario well over three thousand miles since the introduction of the County Road System in 1901; beyond the macadam type we find asphalt, concrete, brick, stone block, and other types of pavements for heavily travelled city streets.

As has been already noted, there have been constructed in Ontario over three thousand miles of stone road during the past fourteen years. The present condition of these roads is good, bad, or indifferent, depending to no small extent on the care exercised and the methods employed at the time of their construction. There are roads which, built five or six years ago, despite lack of maintenance, are still in good condition and carry a heavy daily traffic. On the other hand, other hand, other roads have failed from one cause or another, but these same failures in the past provide the greatest reason why there should be few or none in the future. The question which we hear asked and in which we are all most vitally interested is: What is now most generally accepted as the best method of constructing a waterbound macadam road?

We shall deal with this construction under several heads, viz.:

(1) The necessity for a waterbound macadam road.
(2) Drainage.
(3) Grading and surfacing.
(4) Stoning.
(5) Maintenance.

Traffic Requirements.

When should we build a waterbound macadam road? To go to such an expense as to improve a back township road, over which only two or three light farm rigs travel each day, would obviously not be advisable. Nor would it be wise to construct such a road through the main street of a city, where traffic is extremely heavy. Where then are the limits within which we should seriously consider the advisability of such a form of construction? Here again the saying that "each road is a problem in itself and must be studied on its own merits" holds good. But in order to make a very general statement, a study of traffic census figures leads us to believe that for an average country road under average farm travel, the construction of a waterbound macadam road should be most seriously considered when a traffic census shows from one hundred to two hundred vehicles per day of all classes using the road. This estimate assumes that stone has to be shipped in for use. Where local material is available, this type of road should be seriously considered even when the traffic is much less than 100 vehicles per day. On the other hand, where a census shows that as many as 200 per day use the road, so great will be the increase following improvement that in all probability a more permanent surface should be provided by means of a tar surface or some such treatment.

Drainage.

As a rule this is by no means the most expensive item in road construction but without question it is the most important. It matters not whether it is merely a graded earth road, a stone road, a concrete road or a city street of brick or other material. For one and all the drainage is the most important factor. However much money and labour may be spent on the stoning or surfacing, unless adequate drainage is provided for and assured, the road is foredoomed to failure. One cannot emphasize this point too strongly. How then can adequate drainage be assured?

The desirable width for a road to-day is from 24 to 27 feet between ditches. As to the dimensions of these ditches, the slopes should be 1:1, the bottom generally the width of an ordinary small drag-scraper, and they should be carried to a depth of at least a foot below the roadbed. The depth and dimensions of the ditches will, of course, vary with the soil and with the local conditions. It is where heavy clay soils are encountered that drainage becomes a particularly difficult and often expensive problem. The solution is very generally found by the use of properly constructed tile drains; personally, we believe tile laid on both sides of the road to be generally preferable to the single drain laid under the centre of the road well worth the additional cost. The tile, never less than 4 inches in diameter, should be laid at a depth of three feet below the bottom of the ditches; it should be well packed about with stone and filled up over it with stone for about two and a half feet. Provision must be made to ensure a good run-off for the tile, for which purpose a drainage award is often the most satisfactory way to have the work properly completed and the cost equally proportioned. While the cost of a tile drain varies greatly, a fair average for the laying and backfilling of same, including cost of tile, would run about 5c. to 10c. per foot for 6-inch tile.

Grading and Surfacing.

To properly carry out such work, road machinery is an absolute necessity. Several ploughs and scrapers, very often wagons, and always a roller of at least ten tons are each and all a necessity for the proper construction of the subgrade. Too often one sees money being spent in simply distributing stone here and there with little or no effort to spread it or roll it, the object simply being to make a showing in each township. Rather they should commence by buying machinery, then systematically construct each road or even a certain road in each township in such a way that all work done is well done.

The extent to which hills should be cut down and hollows filled up is largely an engineering problem, which varies with each particular road. The lowest possible grade, while always most desirable, may very often not be the most economic construction. Long grades or even as great as 4 per cent. or 5 per cent. should not be subjects of great concern: above this, however, the increased cost of haul mounts rapidly.

The most desirable width for the subgrade is from 24 to 27 feet between ditches; the shoulders should have a slope of 1½ inches to the foot, while in the centre of the road (for a single track road) an excavation of about 6 inches in depth and 10 feet wide in all should be made wherein to place the stone. The material excavated should be thrown out on the shoulders, raked over and re-rolled. This 10 feet in width should be thoroughly rolled and should have a crown of ¾ of an inch to the foot. The thickness of stone distributed will then be the same all across.

For a double track road 18 feet of stone is considered the most economical width. Here we would emphasize the importance of employing a thoroughly capable roller man, for the future success of the road depends largely on his skill and ability.

Not till the road has thus been carefully prepared and thoroughly rolled is it ready for the stone to be placed.

Construction.

The question as to the most suitable sizes of stone for use on the roads is one of great importance and one on which considerable diversity of opinion seems to exist. Experience seems to show that for stone roads of limestone the use of a screen containing only two sizes of rings namely: 1½ inch and 3 inch holes is best suitable. From such a screen we can then take out

(*a*) Tailings or those crushed stones refused by the 3 inch rings.

(*b*) Stone rejected by 1½ inch ring but passing through the 3 inch rings.

(*c*) Screenings, stone dust and all passing through a 1½ inch ring.

By reason of the fact that trap rock is so very much harder than limestone, the proportion being about 7: 4, it is desirable that when trap or granite rock is being used for the road metal a screen of smaller rings be used. Rings of 2½ inch and of 1 inch are suitable.

We shall then obtain

(*a*) Tailings, stone rejected by the 2½ inch rings.

(*b*) Stone passing a 2½ inch screen; rejected by a 1 inch.

(*c*) Screenings and stone passing a 1 inch ring.

The tailings should first be placed and spread over the centre of the road; these constitute but a very small part of the whole.

The next sized stone (*b*) is then placed on the road to a sufficient depth to make with the tailings, after rolling, the desired thickness. The thickness runs from 6 inches to 12 inches depending on the sort of soil on which the road is being built; 8 to 9 inches generally makes a very suitable thickness.

The stone should then be rolled to a level surface. In this operation the skill and ability of the roller operator is of the greatest importance. It is his duty to instruct his assistant to fill up all small depressions, and to see that on the completion of rolling the road presents a smooth and even surface throughout.

A light coating of screenings (*c*) is next placed and the road thoroughly watered and rolled, the purpose being to fill up the interstices in the coarser stone with those of smaller size and at the same time flush the screenings into the voids. Much rolling and watering will be required to accomplish this. The road should be wet and rolled till it puddles on the surface, showing the voids to be substantially filled. Once this is done only a very light covering of screenings should remain over the road surface. Thorough rolling of the completed surface and shoulders completes the work.

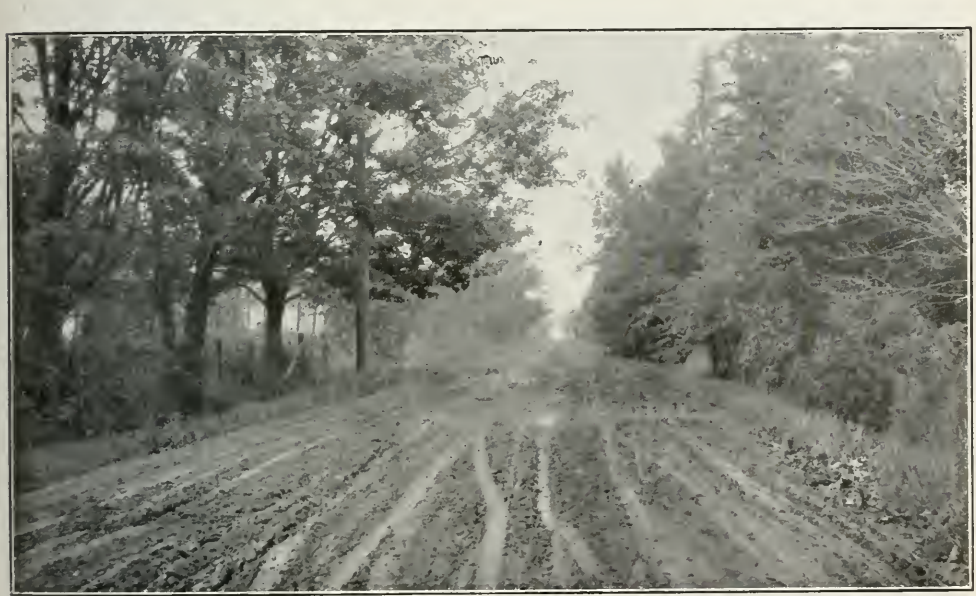
To what extent does rolling compact broken stone?

In loose broken stone the voids are about 40 per cent. Were this stone on an absolutely solid foundation, it has been proved that 6 inches of stone cannot be compacted to 4 inches by rolling: that is, it is impossible to reduce the voids to 6 per cent. But 7.38 inches of trap rock after rolling were compacted to 6 inches, which represents, we think, about the usual reduction in thickness of stone after rolling. It is the pressing of the stone into the subgrade which tends to give us an idea that the compression is greater than it actually is.

This method of construction as described is familiar to all, but just a few

words on familiar faults and difficulties of construction may be of interest. Drainage above all things. One dollar of drainage may often be of more permanent value to any road than five dollars spent on the stone. The better the drainage the lesser may be the required thickness of stone, and the danger from frost is small. The wetting of stone, after the first course of stone is on the road, is not advisable; on the contrary, it merely tends to make the subgrade muddy.

In bringing the second course or the screenings on to the road, the previous course where available should not be teamed over. For the teaming over the unfinished road will tend to form ruts which will very probably be filled up by the screenings. Occuring as these ruts will, just where the future line of travel will be greatest, the road has not then the substance to withstand the traffic just where it is most required, and speedy rutting is the result. When distributing



Frontenac County—A Macadam Road Left Without Maintenance.

the stone and screenings, piles should be left alongside the road every half mile to provide for future maintenance. Watering carts should have wide wheels to avoid rutting the unfinished surface.

Should one varied grade of stone only be used, which means simply crushed stone covered by screenings? This is a big question on which there is diversity of opinion. While it is true that the voids may thus be somewhat better filled, on the other hand it is claimed the larger stones are thus as likely to be near the top as the bottom and will tend to unravel from the road surface quicker than the uniform stones of smaller size.

Finally a word as regards cost. The cost of macadam roads in Michigan averages just under $4,500 per mile. In Halton County this year the average cost is about $2,900 per mile, including 27 pipe of iron or concrete, and three concrete culverts.

But as regards costs every road is a problem in itself, depending on local conditions; and averages are, therefore, of little use to one desiring to know the prob-

able cost of a proposed road. To illustrate this in Halton County; in certain parts of Nassagaweya Township, stone roads were built this year at a cost of about $1,500 per mile, the stone itself being delivered on the road for less than 50c. per cubic yard and the contractor made a little better than wages; in this case quarries were directly alongside the road. On the other hand, in Trafalgar Township where no local stone was available, crushed stone had to be shipped in from Hagersville at a cost of $1.35 per yard and an additional 50c. or thereabouts required to haul stone to the road. The average cost of roads built in this township was $4,300 per mile.

Maintenance.

If a railroad constructs a line however short, it immediately assigns a gang of from 4 to 6 men to look after the upkeep of each section of the road, about 7 miles to each section. Twenty or thirty trains a day might be a large traffic over this road. Why then do we continue to construct roads over which as many as two or three hundred vehicles may pass daily and afterwards neglect them entirely until rebuilding is necessary?

Considering maintenance from an economic standpoint, surely we should follow somewhat the railway practice and adopt a patrol system, immediately following the construction of a road.

Of the tremendous need of maintenance on all roads we have ample evidence, but not until such a system has been tried out for a number of years will we be in a position to give accurate data showing the tremendous saving which cannot help but be effected by the adoption of the patrol system.

GRAVEL ROADS.

J. A. P. Marshall, B.A.Sc.

The majority of country roads in the Province of Ontario which have received a surface covering, are metalled with gravel. Where it is to be obtained within easy hauling distance, gravel is undoubtedly a most valuable material for use on most country roads, and on many of the little travelled residential streets of towns and villages.

Gravel may be defined as a mass of small, more or less rounded fragments of stones which have been broken out and shaped by the action of water or of ice. When properly and judiciously applied, gravel makes an excellent road surface, superior to ordinary earth but not possessing the wearing qualities of first class broken stone.

Gravel varies greatly in quality owing to the nature of its origin. Not only do different gravels differ from each other but any particular gravel may be composed of fragments of a variety of rocks.

It is desirable that the several sizes should be so proportioned that the smaller ones are just sufficient to fill the interstices between the larger ones, since then less binder is required.

The requisites for a good road gravel are primarily that the pebbles shall be hard and tough and the whole capable of binding in a solid mass under the action of traffic. Hardness and toughness enable the gravel surface to withstand the grinding and pounding effect of traffic. The binding of the material into a solid mass reduces the grinding of the pebbles one against the other to a minimum and stops rain water from percolating through the mass and softening the earth foundation below.

From one viewpoint the binder may be considered as the most important component. At any rate, under road conditions, gravel loses its efficiency when the binder is absent and the quality of the latter frequently affords the only means of drawing the line between the good and the bad.

Generally the binder consists of clay, the common form that naturally occurs in gravels. An excess of 20 per cent. of clay in the mass will produce mud during continued wet weather. Just enough clay to coat the pebbles without having any free lumps would be an ideal gravel. Iron oxide is also one of the cementing materials found in some gravels, occuring as a slight coating on the pebbles. Gravel of this nature makes an excellent road material and sometimes compacts much more firmly in the road under traffic than in the original bed. Similar deposits in which there is little or no clay present are found where the cementing material is a lime or a combination of lime and iron ore. Enough small pebbles are sometimes present which will crush up during the construction of the road or under the action of traffic and will furnish a binder that fairly cements the larger stones together. Loam and finely divided silica also compose the binding material in some deposits.

It does not necessarily mean, however, that because a binder is found mixed with the stone that the gravel will be entirely satisfactory for the particular duty it is to perform.

The sizes of the stones, proportion of large to small, amount of sand, ratio of binder and even the colour are all important factors that influence and control in the selection.

When too much binder is present, it results in muddy surfaces; while on the other hand if there be too little, the particles fail to consolidate as they should.

An excellent indication of the quality, though merely an inspection test, is an examination of the material in the pit. If it is found to stand up with a vertical face, to require a pick to dislodge it and if large masses occur in which the smaller pieces are cemented together as in a conglomerate, it may, without hesitation, be pronounced satisfactory. Test pits and borings can be made, and the quality and quantity of gravel obtainable estimated therefrom.

The stone itself should possess like characteristics of those required of broken stone, that is, it should be hard, tough and durable and the fine material that is abraded should have the power of cementing the individual stones together.

Hardness is to take the wear, toughness to resist impact, and cementatious quality of the abraded material is to aid in replacing binder that may have been removed from any cause.

Gravel is very largely used throughout Ontario in surfacing ordinary country roads. In the western portion of the Province the pebbles are made up principally of limestone, but in Eastern Ontario they are more largely of granite, blue limestone and the harder rocks. While of a somewhat more durable quality in the eastern portion it is more generally distributed in the western counties.

Middlesex, Huron and Bruce are especially favoured in the matter of gravel deposits, while it is fairly plentiful in Oxford, Perth and Wellington. Most counties have a moderate supply but there are exceptions, as in Kent, Norfolk, Haldimand, Welland, Lincoln and Wentworth. The absence of cheap roadmaking materials has much retarded road improvement in Kent and in the Niagara Peninsula, following the rule that the land most desirable for agriculture is apt to be most deficient in materials for roadmaking.

In Eastern Ontario, while plentiful in many districts, gravel is totally absent from others, and is not at all evenly distributed. Where there is no gravel, however, stone is usually available, and numerous townships are supplying themselves with rock crushers. In the district formed by the angle of the Ottawa and St. Lawrence Rivers and a line extending northerly from the vicinity of Kingston, the surface is composed largely of glacial drift or "till"; while in some portions of this section, bedrock appears at the surface. Gravel is not very plentiful, but that which does occur is of a hard quality, the waste of trappean rocks, contains little clay and is sometimes free from sand. Occasionally in this district, more especially the easterly portion, lake deposits of the post-glacial age are to be found in stratified layers.

The subgrade on which the gravel is to rest should receive just as careful attention as if it were being prepared for a broken stone surface. Thorough drainage and an adequate foundation for the road must be provided. The subgrade must be so prepared that it offers a firm surface on which the gravel top may be constructed.

The crown of a gravel road should be made one inch to the foot.

There are two principal methods of construction, which for the sake of distinction may be called the *surface* method and the *trench* method.

Surface Method.

The subgrade is brought to the proper shape by use of the grader and firmly compacted. The gravel is brought to the road, dumped on the roadbed and is smoothed out to the desired shape, the larger stone being raked over in the bottom of the road.

The width and depth of the gravel surfacing necessary will depend upon the traffic conditions. A width of 8 feet is a fair average for country roads, the earth grade to be from 18 to 24 feet wide between the inside edges of ditches. A depth of 8 inches to 10 inches is a good rule at the centre. To leave gravel in an irregular ridge as it falls from the wagons is dangerous and wasteful. When left thus, it is avoided by users of the road until late in the fall, when the muddy and rutted state of the road compels vehicles to pass along the mound of gravel.

Care should be taken in alignment and the roller should be used in compacting the surface.

Trench Method.

In this method a trench is constructed in the subgrade of the same width as the gravel surfacing. The subgrade is otherwise prepared in the usual manner so as to furnish a firm support for the gravel surfacing.

The trench is obtained by building the portion of the roadbed prepared for the gravel below the sides an amount equal to the thickness of the gravel surface. On embankments the distance from the edge of the gravel surface to the edge of the slope of the bank should be at least three feet. This part of the roadbed is called the shoulder. The final compaction of the shoulders cannot be accomplished until after the gravel surface has been completed. When finished, the shoulders should have the same slope as the rest of the gravel surface, so that a continuous slope is obtained from the centre of the road to the outside edge of the shoulder.

This method is not used to any extent in Ontario at the present time, but it might be advantageous in roads nearing towns and cities, where the surface would probably be treated with a bituminous binder or tar product.

The surface method is the one most generally adopted in Ontario at the present time.

Crushing and Screening.

Gravel containing a mass of large stones and boulders should be treated as rock, and put through a crusher. A rotary screen attached to the crusher is desirable to separate the crushed stone into coarse and fine grades. Where there is an excess of clay, earthy matter or sand, a rotary screen is especially useful in removing such objectionable material. With a well-arranged plant, and by elevating the materials into bins, the reduced cost of loading into wagons will frequently pay for the crushing and screening.

Dirty gravel should be screened. Gravel when put through a crusher should always be screened to remove an excess of sand or other earth material. When gravel is not screened, very much may be accomplished by care in selecting and taking it from the pit. In drawing gravel to the roads it is frequently the case that teamsters wish to be in company with each other as much as possible. For this reason, when loading the gravel, while there may be room for only one wagon in the pit at the point where the best material is to be found, yet a dozen teamsters drive in and the wagons are filled with whatever stuff can be most easily obtained, whether gravel, sand, boulders or clay.

A great many townships and counties buy gravel by the load. This is very much like buying water by the pailful instead of digging a well. Gravel should be bought by the pit or by the acre and should be available at all times. Especial care should be taken by councils to see that, prior to the performance of road work, the pit is stripped and the gravel treated if necessary.

Cost of Gravel Roads.

The cost of gravel roads throughout the Province varies considerably. In some counties garvel will cost 60c.a yard, delivered on the road, and in other $1.50. A fair average price is $1,200 per mile. In localities where gravel is not within easy hauling distance, however, it will be advisable to consider the use of other metal; since gravel, if not found in the immediate locality, and therefore expensive in transportation, will frequently be found less economical in final cost than a better, though higher priced stone.

Maintenance.

It may take several months before a gravel surface is thoroughly compacted, no matter how well it may have been rolled during construction. During this period careful attention should be given to the road, and the ruts and hollows should be patched as they are formed. In times of wet weather or of frost, a gravel surface will be soft and rut very easily. As in the case of earth roads, the road drag is one of the best tools with which to maintain a gravel road. Where a road grader would unnecessarily disturb the surface, the road drag serves to simply smooth up the road, fill in the hollows and put just enough of the material towards the centre to maintain the crown.

An essential part of the maintenance work is to keep ditches, drains and culverts clear to provide for the removal of the water which falls onto the road.

In conclusion, perhaps the greatest advantage peculiar to gravel, comes from the presence of the binder, which possesses the power of quickly reconsolidating the material under traffic, even after the first bond has been broken, thus reducing repairs and maintenance to a comparative minimum.

When one compares some of the gravel roads in the western part of Ontario, which have received a gravel surface away back in the '60's and the maintenance work kept up faithfully and diligently, with some of the macadam roads built nearby, one is struck with the wearing qualities of good gravel roads. For light traffic, good gravel is a most important aid in the building of good roads.

DRAINAGE

J. A. P. Marshall, B.A.Sc.

The essential feature of a good road is good drainage. This is true in all climates, but it becomes absolutely imperative in Canada, where rains are heavy, at seasons almost continuous and attended in the winter, autumn and spring seasons with severe frost, snow, and slush. Every rule has its exception, it is frequently said, but the makers of roads can safely follow the principle under all conditions, that drainage cannot be too perfect; that where drainage is perfect, there is a perfect road.

On first sight this statement may seem exaggerated. The impression has so long existed, that if we get a surface of gravel or broken stone piled on a ridge of earth, we have built a road, it is difficult to adjust our minds to other principles. No doubt, working with this object, many fairly good roads have been produced, but they are, in a measure, the result of accident rather than reasonable and clear-headed design. When roads are built with the fundamental purpose of doing so by securing perfect drainage, we will be on the most direct and shortest route towards securing good roads. Much unnecessary labor and money will be saved as well as much disappointment and dissatisfaction.

Water is the natural enemy of any road, and best results cannot be obtained from the materials used, let them be what they may, until the water is eliminated. This is a matter which, generally speaking, has been very much neglected—probably from a lack of a clear understanding of its importance. A road built of the poorest kind of material and in the most unworkmanlike manner, will generally last a long time if it is properly drained, but on the other hand with poor drainage, even the best and most expensive roads will soon go to pieces. No one item adds more to the good quality of any road, and no one cause operates more quickly to destroy it. If earth roads could be made so that the surface should be practically impervious to water, and the water beneath the surface be removed, such a condition would produce ideal roads. The soil absorbs water easily, so that it is scarcely possible to make a surface that will shed it all, especially in climates where the surface is subject to periodic freezing, thawing and rainfall. Roads in Ontario which are excellent during the summer season, when the roads can be kept intact, lose the semblance of their summer and fall conditions during the winter and spring months mainly because the surface is not waterproof, and when a road-builder so utilizes local materials as to produce a roadway, the subgrade of which shall be dry—either naturally or artificially—with a surface which is impervious to water, then he has the perfect road.

The best kind of drainage can be determined only by experience, but this paper is presented to emphasize the importance of the subject of drainage—a subject which needs careful study and investigation—and to give some general method that, with variations to suit local conditions throughout the Province, may be employed to successfully drain the roads.

Drainage implies:

1. That the road be crowned to shed water to open drains and gutters.
2. That the open drains have a constant fall to a good outlet.
3. That the water rising in the road from below be carried by deep or tile drains.

4. That the surface of the road be kept smooth, free from ruts and hollows, so that water will not remain on the surface.

Drainage is accomplished in two ways:

1. By surface drainage.
2. By sub-surface drainage.

Surface Drainage.

The drainage of the surface of a road is very important and is provided for by making the surface crowning and keeping it smooth. It is well to remember that water upon the surface of the road cannot be carried away by the underdrains, since the water can reach them only after it has penetrated the road surface. The slope from the center to the side ditch should be sufficient and the surface kept free from ruts.

Unless the excavation on the sides of the road have a sufficient and continual fall to outlets, they are not drains but merely elongated ponds. In this way mud is formed beneath the surface of the roadway. See that the water flows away, not soaks away.

Sub-Drainage.

Now let us turn to the matter of under-drainage. The deep, unsightly, and in many cases, useless open drains at present in use on the public highways throughout the Province should be disposed of without delay, because they are entailing an enormous liability against the municipalities, not to speak of an existing menace to the travelling public. No farmer, however short-sighted, would think or attempt to drain his farm with open drains. The result of these open drains throughout the country is that a large per cent. of our roads are receptacles or trench channels established to carry off the water from the adjoining farms.

Since the adoption of County Roads in Ontario, miles of drains have been tiled. In every case good results have been obtained, infinitely superior to that of an equal expenditure on surface material. Side ditches are necessary to dispose of the water.

The size of tile required for any particular situation will depend on the length of the drain, the fall and the amount of water to be carried away. Don't use tile less than four inches. If we use smaller tile, they are liable to become blocked by slight depressions and irregularity in laying.

The tile should be laid at the side of the road at a depth of 2½ to 3 feet. On hills the tile should be placed under the shoulders where the trench will not be washed out.

Soils.

It is of advantage to understand the manner in which underdrains act in different cases. With porous soils, in which the water rises under hydrostatic pressure, the water enters the tile from below. Just as water rising in a vessel finds an outlet in the sides or flows over the top, so the underdrains supply the necessary outlet and lower the "water line."

With clay the process is different. Absorbing and holding as it does, like a sponge, a large quantity of water, drains are less effective but none the less necessary. Cracks and fissures which appear throughout the surface of a baked soil during the summer drought afford a clue to the action of underdrains upon the soil. As the clay yields up its moisture, it shrinks, and is torn apart. The

fissures commencing at the drain spread in different directions and each fissure thus becomes a new drain leading to the tile. This keeps on year by year and these fissures become filled with sand, vegetable and porous material until they assume a degree of permanency and in clay soils thus underdrainage is more effective after several years than at first. As a rule, a tile drain, laid in close clay soil, will drain six times its depth on each side. In porous soils they give good results for much more than this, at times up to 15 or even 20 times the depth. With the exception of a stiff clay, a line of tile laid on one side of the road at a suitable depth will do almost as well for the roads as tiling both sides will do. The only road that will not be improved by the most prefect system of drainage that can be given it is a road of pure sand.

Outlets and Catch Basins.

An unprotected outlet of a tile drain is very apt to be broken and obstructed by horses and cattle stepping on the tile. If the outlet is into an open ditch, or natural creek, the end of the tile should be protected by a small concrete abutment, or if the tiles are near the surface, as they often are, a very good method is to lay the tile in concrete and cover them over with, say, four inches of the same material, thus making a continuous concrete pipe of such length as the circumstances seem to require. If the outlet is to be in another covered drain, the junction should be made in a suitable catch basin. Catch basins are of great advantage to drainage, if built in a permanent and suitable way. The best and, therefore, the cheapest is the one built in place, and of concrete, and should be about 16 inches by 3 feet inside and have a concrete bottom and top, the top to be fitted with a removable cast iron grating of sufficient weight to insure its remaining in proper place.

Some of the advantages of catch basins are:

(1) That they admit surface water into the drain readily and insure the drain working to its full capacity even when the ground may be frozen.

(2) They are useful as inspection holes and enable one to ascertain if all parts of the drain are in working order.

(3) The pit in the bottom serves as a trap to catch all sediment that may get into the drain, and—

(4) They serve as a vent to let the air escape from the drain and enable it to run at its full capacity, which obviously a drain sealed at both ends will not do.

When new outlets have to be provided and old ones improved, the aid of one of the Drainage Acts will sometimes have to be invoked. Usually the Ditches and Watercourses Act is the one most suitable.

While road improvement in almost any form will yield big returns, it is safe to say that for the amount expended, with the one exception perhaps of the road drag, the largest dividends from anw expenditure in highway improvement will come from an outlay on the perfecting of the drainage.

In conclusion: The greatest enemy of a road is water, and the greatest benefit we can bestow on such a road is protection from that enemy. This is the purpose of drainage.

THE GEOLOGY OF ROAD BUILDING MATERIALS

G. C. Parker, B.A.Sc.

For an understanding of the science of highway construction a certain knowledge of the more common materials used is necessary. For many years it was sufficient for the one in charge of the construction work to know that materials were available, without devoting much attention to the qualities of such materials. With the rapid developments in highway engineering, the growing demand for more permanent construction, and the increasing severity in conditions that our roads are required to withstand, a more intelligent choice of materials is demanded. The following points are emphasized with a view of giving a brief outline of the information that every person directly interested in road building throughout the Province of Ontario should possess.

The Waterbound Macadam Road.

For the sake of simplicity we may consider the waterbound macadam road to consist of two sections. The foundation section usually consists of large pieces of stone or gravel and forms a solid base for the top portion of the road. It is required to withstand only the weight of the traffic and the action of frost.

The top section or surface, which consists of smaller pieces of metal bound together by a natural cement, is required to meet more severe and more varied conditions.

Conditions Met by Surface.

There is the impact of the horses' feet which tend to break the stones and to dislodge them from their bedding. In order to resist this it is necessary that the rock be tough and the binder sufficiently strong to withstand the tendency of the traffic to loosen the pieces of stone.

Wear is caused by the grinding action of the steel tires of the horse-drawn vehicles. To resist this the stone must not only be tough but hard.

The destruction of the binder is caused, as said before, by the impact of the horses' feet, the dislodgement of the stones by the weight of the traffic acting through the tires, and the action of motor traffic.

Action of Motor Traffic.

It might be well to consider for a moment what takes place when a motor car or motor truck passes over a waterbound macadam road. There are three distinct actions taking place. In the first place the propelling force of the car acting through the tires tends to shear off the top part of the stones. There is also what might be termed "water solution," which destroys the binder. This occurs when during wet weather small pockets in the road fill with water. The cause of these may be the dislodgement of stones from place or the wearing down of some of the material that is softer than the rest. When a rubber tire drops into these small holes the mixture of stone dust and water is splashed out in the form of mud. This is repeated continually and the small pocket gradually becomes a pitch hole.

During dry weather, the rubber tire flattens out as it comes in contact with the road surface and on leaving it picks up the dry binder from between the stones, and the strong current of air ever present under a swiftly moving vehicle carries it away in the form of dust. The binder must therefore be strong in order that the road will not quickly go to pieces.

Frost.

In cold weather which usually follows a prolonged wet spell, the water that has penetrated the roadbed freezes and not only causes destruction of the binding material but, if the stone has absorbed any quantity of water, it will be disintegrated. Consequently it is of importance that the material be non-absorptive.

Classes of Rock in Ontario.

There are three varieties of rock found in Ontario, which are used for road material. These are the igneous, the sedimentary and the metamorphic series.

The igneous rocks may be partly or wholly crystalline in their structures or they may be glassy with no crystalline structure whatever, like furnace slag. Those which are wholly crystalline are made up of clearly defined interlocked crystals. An example of these is granite. Rocks of this class are thought to have formed far below the earth's surface.

Those which are partly crystalline are made up of a number of clearly defined crystals embedded in a glassy mass of a different material. They form a connecting series between those which are wholly crystalline in their structure and those which are non-crystalline or glassy. They are thought to have formed close to the earth's surface. An example of this class is diabase, well known in the Cobalt area, which although not one of the most typical members of the group is perhaps the best known.

Those in which very few or no crystals are visible to the naked eye are called volcanic or extrusives. Their texture is glassy and, as said before, resembles that of furnace slag.

Igneous rocks vary in colour from the light grey, pink and brown of the acid granites to the dark steel grey or black of the bassic gabbro, diabase and basalt. They may for our purposes be divided into three groups, traps, granites and felsites. Of these the more common encountered in highway engineering are the traps and granites. It must be remembered, however, in making this general classification that each of these groups contains a large number of different kinds of rocks, but for the sake of simplicity these classes are taken.

Colours of Igneous Rocks.

The traps, generally speaking, are very dark in their colour and, as stated before, have several typical structures.

The granites, which we all know, may be grey, green, yellow or red in colour. The structure is wholly crystalline, the crystals being visible to the naked eye.

The felsites include the lighter coloured, fine grained, volcanic rocks. As they are found in limited localities they need not come under serious consideration at this time.

Sedimentary Series.

The class of rocks next in importance, as well as that used almost exclusively in the southern and south-western portion of the Province, is the sedimentary series, of which limestone is the chief example. The other members of this series are the dolomites, conglomorates, sandstones and shales. The unconsolidated varieties are sand, gravel, clay and marl.

Sandstones are solid rocks that have originally been laid down as beds of sand, either on land or water, and have later become hardened and bound together by pressure and cementing solutions. In a similar way conglomerates and shales are hard rocks derived from beds of gravel and clay.

Limestones have been formed by the action of living organisms, such as corals, by the cementation of beds of shells and by the precipitation of sea water and the water of salt lakes. They also contain varying amounts of sand and may grade from sandy limestone to sandstones with a high percentage of limestone present.

Chert or flint is often found associated with limestone. It is a very dense, fine-grained form of silica. It is found imbedded in the limestone or in separate layers interbedded with it.

The Metamorphic Series.

A third but less important class of rocks is the metamorphic series. These rocks have been produced by the prolonged action of heat, pressure and moisture on both the sedimentary and igneous rocks. For example, marble is the metamorphic form of limestone although differing from it in colour, texture and form of bedding. The other members of the same group are gneiss, schist, quartzite and slate.

Dividing Line Between Formations.

Although both the igneous and sedimentary rocks are found in the Province, they are limited to distinct districts. A line drawn from a few miles below Kingston, on the St. Lawrence River to Midland, on the Georgian Bay will very closely trace the dividing line between the districts where these rocks are found. North of this line the igneous rocks are everywhere visible while to the south the sedimentary rocks are found exclusively.

Suitability of Rocks for Road Surface.

For the top course of the waterbound macadam road, traps and felsites are the most suitable, particularly where traffic is heavy enough to supply sufficient binding material. They are tough and hard and the wedgelike particles into which they break assists in the compacting of the road. The natural binder from these rocks makes a strong bond with the pieces of stone.

The granites come next in order. As a class they do not furnish the best of material but there are exceptions to this, particularly horneblende granite. They are usually hard and tough, but possess a very low cementing power which renders them less suitable for the top course of the road.

Gneiss, which is the metamorphic form of granite, possesses much the same qualities, being hard and tough but low in cementing qualities.

Limestones and dolomites follow and owing to the wide variation in the qualities it cannot be said that they make good road material. As a class they do not, yet the harder varieties rival the trap rocks for road metal. They usually have a high cementing value but are apt to be soft and porous. As limestones as a class have a good cementing power, a hard, tough limestone may be relied upon to give good service.

With the exception of gneiss, the rocks of the metamorphic series need not come under serious consideration, as they are practically of no value except for the foundation course of the road and even then should be chosen with care. Schist, marble and quartzite all have some suitable qualities but do not possess all the necessary properties that are required for road metal. Slate possesses no properties that would justify its use on the road at all.

Fieldstone is used in some localities with success. As it contains boulders of both igneous and sedimentary rocks and may also have some of the metamorphic rocks present, it must be dealt with separately.

During the slow movement of the glaciers across the continent, pieces of the bed rocks have been torn off and carried forward in the path of the ice movement. The confused mass thus gathered in addition to clay and small pebbles contained large boulders. Although it often happens that it is unsatisfactory as a road material it is usually much better than the original rock from which it was torn. This is due to the fact that the rude treatment to which the fragments were exposed while being carried along in a glacial sheet wore out the softer materials, leaving only the harder and tougher varieties. On this account the glacial boulders which have not been subjected to decay often furnish material rivalled only by the product of the best trap and limestone quarries.

Where the boulders have lain for a long time exposed to the elements, decay sometimes penetrates them to such an extent that they are unsuitable. In using fieldstone, therefore, it is advisable to separate those which have been penetrated by decay from the sound ones and confine them to the bottom of the road.

The extent to which decay has rendered the stone unsuitable may easily be determined in the field. After a little experience a person may by the aid of a small sledge hammer distinguish between those which are suitable and those which are not. If they ring sharply to the blow of the hammer they are sound. If, on the other hand, they pulverize under successive blows and when broken show evident traces of decay, as by iron stains penetrating the mass, they should be condemned.

Sound fieldstone, when crushed to commercial sizes, forms a remarkably good material, and even when of inferior value, it may be used for the bottom course and a better grade of stone applied to the top of the road.

Properties Necessary in Rock.

The necessary properties for a rock suitable for the top section of a water-bound macadam road are briefly as follows:

It should be tough to resist the shocks from traffic.

It should be hard to resist the grinding action of traffic.

It should possess good cementing properties to resist the tendency of the traffic to dislodge the stones.

It should break with a clean, angular fracture in order to compact solidly in the roadbed.

It should be non-absorptive in order to resist the action of frost.

Owing to the wide variation in the degree in which the above qualities are possessed by the rocks found throughout the Province and the difference in the traffic conditions on roads within adjacent localities, care should be taken that the material selected should meet conditions. It is a waste of money to build a road of soft limestone where there is heavy traffic of both horse-drawn vehicles and motor cars and trucks simply because the material is easily procured and the original cost kept low. The amount spent on maintenance will, in a case like this, soon exceed the cost of the use of a superior material which would need a very small amount for repairs. It is in many instances more economical in the end to build the foundation of local stone and import a higher grade of limestone or even a good trap rock for the top section of the road. On the other

hand, where light farm traffic is to be provided for, a lower grade of stone will usually give quite as satisfactory service as a better and more expensive material.

The choice of a suitable road metal is just as important as the proper grading and ditching of the road, if the best value is to be received for the expenditure involved.

Gravel.

Gravel is next in importance to broken stone for road construction in Ontario. In some localities where stone is not available, it is being used with success. While it is not adapted to use on roads subjected to heavy traffic, good gravel serves the purpose admirably for the average country highway.

Gravel may be defined as a mass of small fragments of stone which have been broken off and shaped by the action of water and ice. The pebbles represent the hardest part of the bed rock from which they have been removed. Mingled with these fragments of rock is a mass of sand and a certain amount of clay.

Gravels in Ontario fall into three geological classes, beach gravels, moranic gravels and stream gravels. The beach gravels are being laid down on the beaches of lakes to-day. Toronto Island is composed of beach gravel, or sand. The same thing is found at the mouth of every stream flowing into Lake Ontario. Corresponding to these gravels there is a gravel belt lying along an old beach line which follows the shores of Lake Ontario and is from two to seven miles from it. Similar belts are found near the shores of Lake Huron and Lake Erie. They represent the beaches of the lakes when they stood at a higher level and covered a much larger area than they do at the present time. Beach gravels are generally free from clay and the pebbles are round, flattish, or disc-shaped.

The moranic gravels were laid down by streams directly connected with glaciers. These streams flowed inside a sheet of ice and deposited a long winding ridge of sand or gravel on the floor of their channels, or they flowed on top of the ice sheet and poured their debris into holes in the ice in cone-shaped piles.

The moranic gravels are characterized by the angularity of the pebbles and the fact that the gravel grades horizontally into clay and is both overlain and underlain with clay.

Stream gravels are being laid down by streams not connected with glaciers, but are of a very limited extent. In places like Kent County a great deal of stream gravel is used and the City of Chatham uses gravel obtained from bottoms of the Thames and St. Clair Rivers.

To make good road material, gravel should contain hard, tough stones. Unless this quality is present the road will quickly wear. The pebbles should vary from a large to a small size in order that the voids will be a minimum. There should also be a sufficient quantity of binding material to cement the whole mass together.

The binding process in a gravel road is divided into two parts. The gravel as it comes from the pit contains a natural binder which causes the road to compact and bind when it is rolled. Then under the action of traffic the stones are worn and the dust, when wet, forms a binder in the same way as a stone road furnishes binder under the action of traffic. Consequently a gravel that binds easily when the road is constructed does not always give the best service. A very common mistake is often made in this connection, as a large percentage of clay will cause a road to compact quickly and easily but in wet weather the

clay forms into mud and the road puddles. All that it requires is sufficient clay to coat the pebbles without having free lumps present. From experience it is found that more than 10 per cent. clay is objectionable.

The specifications of the Michigan State Highway Commission require that gravel for the first course shall be good bank gravel, of which not less than 60 per cent. shall be pebbles that will pass a ½ inch and be retained by an ⅛ inch screen. For the top course the maximum size of the pebbles is 1½ inches and there shall not be over 20 per cent. clay, evenly distributed and with no free lumps.

Pit gravel usually contains an excess of earthly material and can be improved by screening.

River gravel is still being deposited in drifts and bars by streams and while it resembles pit gravel it has, as a rule, not as much clay, and is one of the best sources of road material.

Lake gravel varies a great deal in character. It is usually free from earth and clay and contains sufficient sand to pack well, but it has a tendency to be slaty, which is undesirable.

In accepting these statements, the great variation in qualities possessed by gravels even of the same class must be remembered and before deciding on a material all the available deposits should be visited and a thorough inspection made of the material in each.

A gravel that possesses suitable binding qualities will stand vertically in the pit and require considerable force, if not blasting, to remove it. If it comes from the pit face in large boulders of cemented material resembling conglomorate rock it may be said to contain suitable binding qualities.

The sizes and shapes of the pebbles as well as the materials of which they are composed have a vital effect on the service that the gravel will give. These qualities can be roughly determined by observation. Sharp angular pebbles are preferable to round, flat, or disc-shaped ones for the reason that they will compact into a denser mass and afford greater opportunity for the binding material to hold them in place. The advantage of having pebbles of *all sizes* has been shown.

The determination of the materials composing the pebbles is more difficult, but by breaking some of the larger ones and identifying them as igneous or sedimentary rocks, the smaller ones can be picked out and properly classified. As trap rock is superior in hardness and toughness to the other rocks, a gravel that contains a fair percentage of trap pebbles can usually be relied upon to give good service. Hard limestone pebbles also form good gravel, but a large percentage of sandstone and shale will quickly cause the road to go to pieces.

The sizes, shape, and material of the pebbles having been determined, a small amount of the gravel should be weighed and screened on a ¼ inch screen, and the amount retained should be weighed. It should be from 60 to 70 per cent. of the total weight. Of the material passing through the screen about half may be considered to be clay or other binding material.

As stated before, the importance attached to the judicious selection of road materials cannot be over emphasized. We demand the most rigid tests for our cement, steel, brick and other building materials, yet in the past we have thrown any stone or gravel on the road and expected it to give the service of the old Roman roads. The time for that, however, is past and as highway construction is more fully realized to be a highly specialized branch of engineering, as high standards will be demanded for stone and gravel as for other materials of construction.

THE TESTING OF STONE AND GRAVEL

G. C. Parker, B.A.Sc.

That the probable behaviour of a road metal on the road can be largely determined by tests of its physical properties in the laboratory is being realized more fully every day. When stone or gravel is to be used for concrete work, detailed specifications are drawn up which the material has to meet. But when stone or gravel is to be used on a highway, little attention has been given to its properties. If it has given good service on roads already built it is generally assumed that it will be satisfactory for the new work, without consideration of the difference in traffic conditions, condition of the subsoil or drainage.

The inconsistency of this is self-evident and there is everything to be gained and nothing to be lost in the assurance, based on laboratory tests, that the material is suitable for the projected work.

As early as 1878 engineers in France saw the advantages to be gained by the development of laboratory tests for road-building materials and a road materials laboratory was founded in the School of Bridges and Roads. Here the Deval abrasion test for rock was evolved and this is used in all highway laboratories at the present time. Much valuable data was collected in this laboratory regarding the hardness and toughness of rock and tests for the determination of these qualities were developed which are the same in principle as those used to-day.

Outside of France very little was done in road material testing until 1893 when the Massachusetts Highway Commission established a laboratory in the Lawrence Scientific School of Harvard University. Here the test for the binding power of rock was evolved.

In 1900 the United States Government established a laboratory at Washington which is now under the direction of the Office of Public Roads.

The increasing interest in the necessity of good highway construction has lead to the establishment of many laboratories in a number of the technical institutions in the United States and three years ago a laboratory was opened in the Faculty of Applied Science and Engineering of the University of Toronto and a course in Highway Engineering added to the curriculum.

At the present time tests are being conducted in this laboratory under the direction of Mr. McLean. The equipment is with one exception identical to that of the laboratory at Washington and the methods of testing are the same.

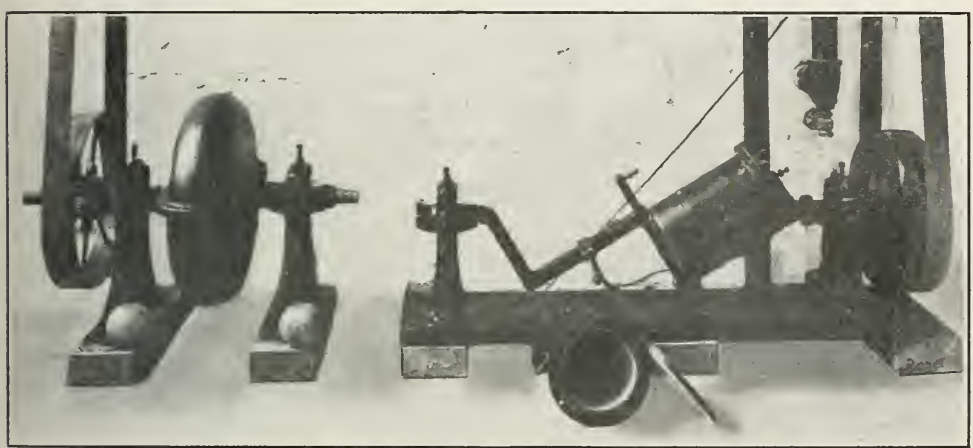
In the testing of stone the following properties are determined: wearing qualities, toughness, cementing value, absorption, and specific gravity. The test for the determination of hardness alone is not conducted, as it was found that it was not always reliable and, as the test for wearing qualities indicates the hardness of the material, little information is lost by the omission of the hardness test.

Abrasion Test.

The test for wearing qualities is made in the Deval abrasion machine. About 11 pounds of stone, broken into 50 pieces of as nearly the same size as possible, are placed in one of the cylinders. The cylinder is closed and mounted on the framework, as shown, which holds it at an angle of 30 degrees with the horizontal. The framework and cylinder are revolved for 10,000 revolutions at a speed of 33 per minute and the stone is thrown from one end of the cylinder to the other twice every revolution, striking against itself and the sides and ends of the cylinder. At the

end of the test the material is removed, and all that retained by a 1/16 in. screen is thoroughly washed, dried and weighed. The difference between the weight before the test and the weight after gives the loss of material due to wear. This is expressed as the percentage of wear or as the French Coefficient, which is obtained by dividing 40 by the per cent. of wear. Thus a stone having 5 per cent. wear would have a coefficient of wear of 8.

This test brings out the hardness as well as the toughness of the rock, since the rock must be tough to resist the impact caused by hitting against the cylinder and must be hard to resist the grinding which takes place as it rubs against itself and the walls of the cylinder.



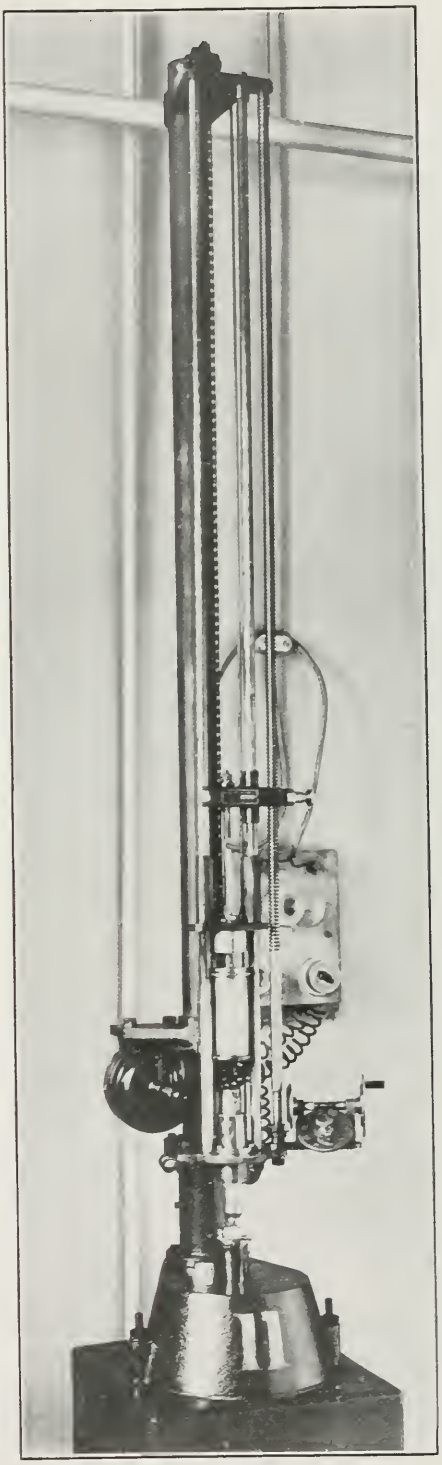
Deval Abrasion Machine for Determining Wearing Qualities on right, and Ball Mill for Grinding Material for Cementation Test on left.

Toughness.

The toughness of the rock is determined by preparing a core of the material one inch in diameter and one inch long and placing it in the impact machine for determining toughness.

The electric motor "A" drives the chain through a worm gear. By means of lugs the chain raises the crosshead "C" which in turn lifts the hammer "D" by means of an electro-magnet. When the pin on the top of the crosshead "C" touches the pin projecting from the bottom side of the adjustable head "B." the circuit is broken and the hammer "D" drops, transmitting its blow through the plunger "E" which has a ball-shaped end and rests on the specimen. An instant after the hammer drops a mechanical contact releases the crosshead "C" which slides gently down the guides to the hammer and is ready for the next trip. The height of the fall of the hammer is determined by the position of the adjustable head "B" which may be changed by turning the handle at the right of the machine. The height is registered on the dial.

The test consists of starting with a drop of one centimeter and increasing by one centimeter for each succeeding drop until the specimen fails. The number of blows represents the toughness of the material.



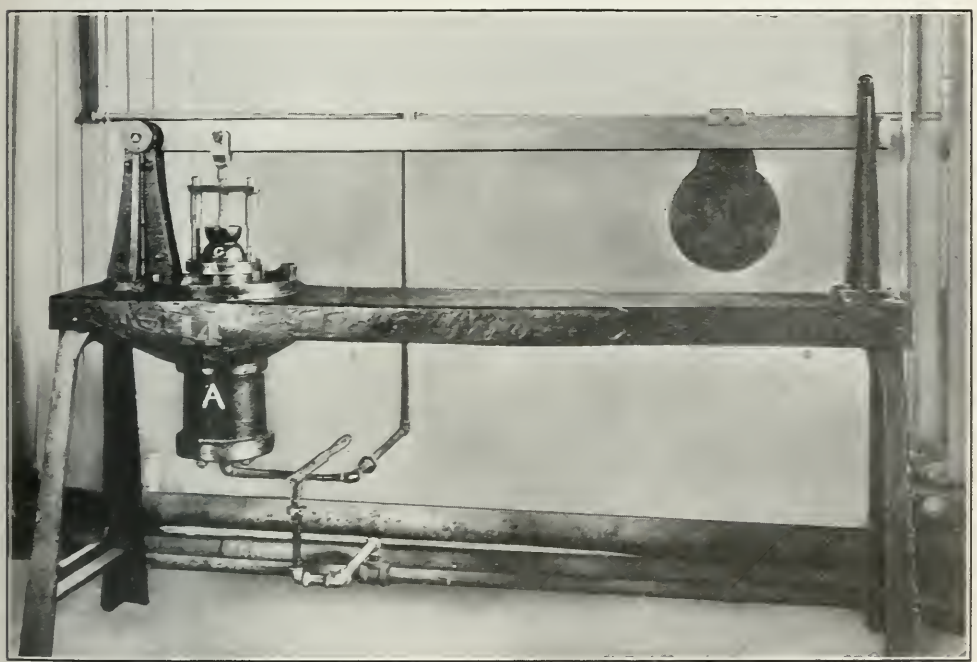
Impact Machine for Determining
Toughness of Rock.

Cementation Test.

The binding power or cementing value of the material is determined by grinding up some of the material with water in the ball mill.

Two large shot are placed in the mill with the material and the machine is revolved for 5,000 revolutions at a speed of 33 per minute. The resulting mixture resembles moist clay and is made into briquettes one inch long and one inch in diameter in the briquette moulding machine.

The material is placed in the mould "C" and the plunger "D" dropped in place over it. Water pressure is applied through the cylinder "A" and this raises the platform "B" carrying the mould. The top of the plunger comes in contact with the plunger hanging from the beam and the pressure is kept



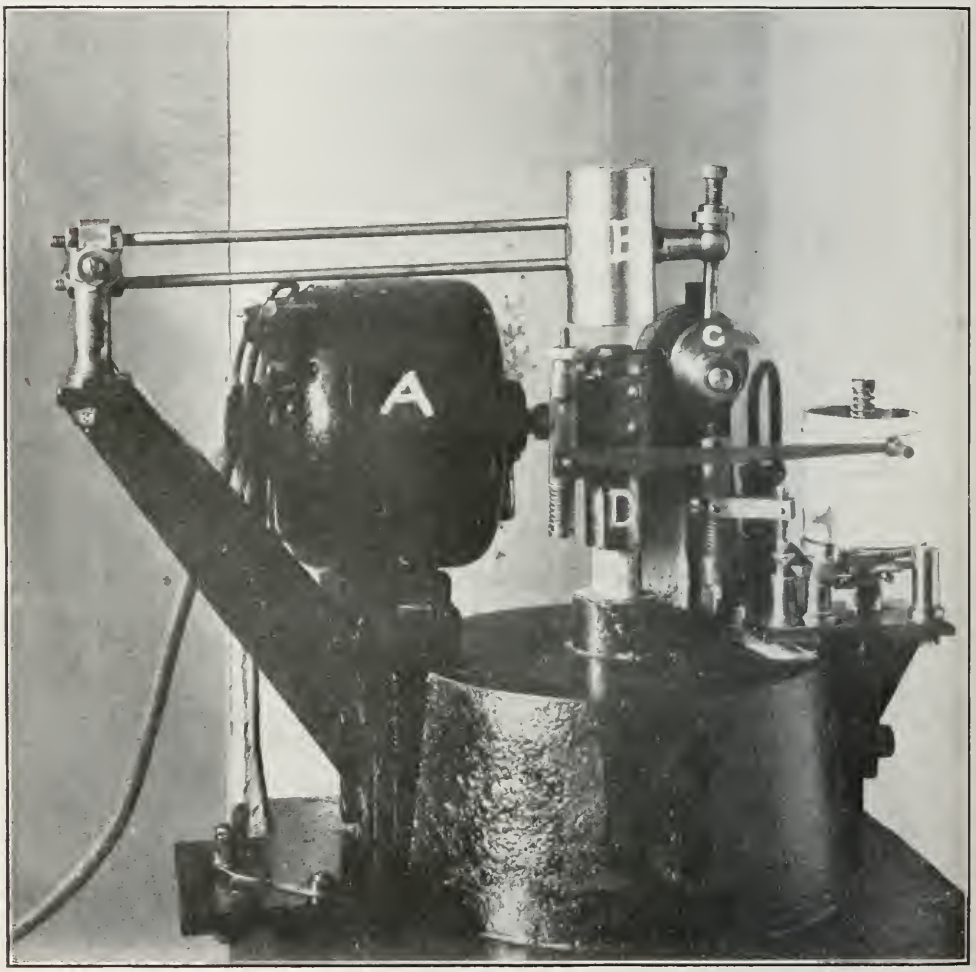
Briquette Forming Machine.

on until the beam with the weight is raised. The pressure on the briquette is determined by the position of the weight on the beam and that adopted as standard for this test is a total pressure of 1,875 pounds. The amount of material required to produce a briquette one inch long is determined by trial.

The briquettes are dried for twenty hours in air and for four hours in a hot oven and then tested on the impact machine for determining cementing values.

The electric motor "A" drives the cam "C" through a worm gear. As the cam travels around it raises the hammer "B" and allows it to drop, striking the plunger "D" through which the blow is transmitted to the specimen. So long as the briquette withstands the blow there will be a slight reaction which causes the plunger to rebound. This is recorded on the revolving indicator by the arm attached to the plunger and carrying a pencil.

In making the test the drop of the hammer is set at one centimetre and the blows are repeated until no reaction is recorded. The number of blows to cause failure represents the cementing value of the material. The average of five briquettes are taken and recorded for the test.



Impact Machine for Determining Cementing Value of Rock Powders.

Weight per Cubic Foot.

The weight of the solid rock per cubic foot is determined by finding the specific gravity of a small piece and multiplying it by the weight of a cubic foot of water at standard temperature.

Absorption.

The absorption is found by immersing a small piece of the rock for four days in water. The increase in weight represents the amount of water absorbed and is expressed in pounds of water absorbed per cubic foot of solid rock.

Mineral Analysis.

In addition to the determination of the physical properties, it is of advantage to know what minerals are present in a rock. In order to do this a small piece of the rock is ground down thin enough for light to pass through it. It is placed under the microscope and, as the mineral present can be identified by their colour and crystalline form, an experienced person can determine within a fair degree of accuracy in just what proportions they occur. This test is, however, secondary to the mechanical tests from the standpoint of the road-builder.

In discussing the value of the different classes of rocks for road metal they were placed in the order of traps, granites and limestones. That this is borne out by tests is shown by the following table, which shows in what respects the rocks differ.

Table showing Average Results from 3,000 Tests on Rocks used for Road Material.

Class of Rock	Per cent. Wear	Toughness	Hardness	Cementing Value	Specific Gravity
Traps and Gabbroes	3.6	21	16.4	149	2.82
Granites	3.3	14	17.9	23	2.71
Limestones and Dolomites ..	5.3	10	13.8	51	2.70

The traps and granites are about the same in wearing qualities and the granites are a little harder but much lower in toughness and cementing value. The high cementing value of the trap rocks is worthy of note. It greatly offsets any advantages that the granites may possess in wearing qualities and hardness.

The limestones or dolomites are much lower than the traps in all properties but higher in cementing value than the granites. As the property of the stone dust to form a bond with the pieces of stone is of utmost importance in the choice of a material, the greater cementing power of the limestones render them superior to the granites.

Tests on Gravel.

The tests on gravel, while not as satisfactory as those on stone owing to the number of materials of different sizes present, nevertheless furnish more accurate and reliable information than mere inspection in the field.

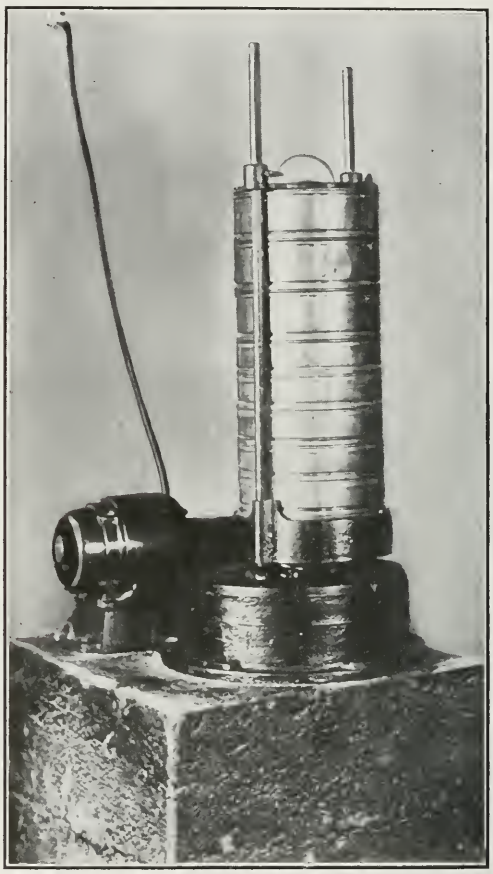
The properties determined are: the resistance of the large pebbles to wear, the proportions of the different sizes present, and the amount of clay and silt.

In some laboratories tests for cementing value are made on the material passing a $\frac{1}{8}$ inch screen, that retained by the $\frac{1}{8}$ inch screen and the material as received.

The test for wearing qualities and the tests for cementing value are made in the same way as for rock.

In making a sieve analysis, to determine the proportions of the different sizes present, a known weight of the dry material is placed on the coarsest of a series of large screens and the proportions retained on each determined. Of that passing the $\frac{1}{8}$ inch screen about one pound is taken and placed on the top of a stack of screens with the coarsest on the top. The screens are placed in a power sifter and screened for a given time, after which the amount on each screen is weighed and the percentage of the original amount calculated. The sizes of screens used are 20, 30, 40, 50, 100 and 200 meshes to the inch.

A common type of sifter used is shown in the accompanying photograph. The electric motor, through a worm gear, drives the frame holding the screens, giving it a oscillating rotary motion and at the same time jolting it up and down.



Motor-driven Sifter with Stack of Sieves.

Silt and Clay.

The determination of silt and clay is made by placing a known weight of the material in a glass vessel and washing the fine material out by a slow current of water. The point where the clay and silt has all passed away is indicated by the clearness of the water on top of the material. It is then removed and dried and weighed and the loss in weight is expressed as a percentage of the original weight.

All the tests on road materials have been adopted with a view to approximating as closely as possible actual conditions. They have of necessity, however, to be arbitrary and the results of tests on one material possess no significance. When used as a means of comparison with tests on other materials they are of great value, more particularly when considered in the light of service on the road.

While a certain amount of information regarding the qualities of materials can be gathered by inspection in the quarry or pit, choices, as far as the qualities of the materials are concerned, should be made only on the bases of full laboratory reports.

CULVERTS

R. M. Smith, B.Sc.

Highway bridges and culverts in design, methods of construction and supervision, and economic features, form an important and interesting department of highway engineering. A bridge is commonly associated with the crossing over of a living stream, while a culvert suggests an artificial channel through or under an embankment, length of span and design being distinctive features. The number of bridges of 50 ft. and upwards is usually very limited as compared with culverts or bridges of 10 ft. or less, which are innumerable. One mile of ordinary country road may have a dozen culverts. While each bridge may cost as much as several culverts, yet the large number of culverts to be maintained make them in the aggregate an important item of expenditure and often much more than a municipality's total outlay for larger structures. Culverts or short bridges are, therefore, from the standpoint of cost, as deserving of careful attention as are the larger structures.

The common fault in short spans, bridges and culverts, is that they are too short with insufficient width of roadway. As a rule it will be found as cheap to carry tile entirely across the road, using lower head-walls and widening the fill, than to use a shorter length of tile with necessarily higher and longer head-walls to retain the earth fill. The clear width of roadway should be at least twenty feet, as narrower bridges have an element of danger and, in appearance, are an obstruction to rather than a continuation of the highway. Ordinary culvert heads take about two cubic yards of concrete. Suppose concrete costs $8.00 per yard, which may be low for small jobs of this kind, the culvert ends would cost $16.00. If you shorten up the culvert you have to build a head-wall twice as large to take care of slopes. There is $16.00 additional cost of culvert head which could be used in construction of a wider culvert. Culverts are being made of the following materials: Timber, clay, cast iron, corrugated metal, stone, concrete and brick. The selection of materials depends upon:

(1) Cost.
(2) Availability of material.
(3) Freight charges.
(4) Cost of hauling.
(5) Cost of construction.
(6) Location of culvert.

Round cross-section culvert discharges more when flowing full than any other section. Three feet diameter is the largest size generally used. When the flow requires a greater opening two pipe culverts are used, or box or arch construction put in. Culverts must be designed: (1) to support the weight of material which covers them, also the superimposed load: (2) to stand severe expansion forces, caused by water freezing within, due to pipes becoming blocked.

It is hard to determine the load a culvert may be called upon to carry; cast iron, corrugated metal or vitrified clay have been used with sufficient varying conditions to prove that they will resist successfully any load they are liable to receive, provided they are properly placed. The design of re-inforced concrete, concrete pipe, box and arch culverts should be carefully prepared so that they will support the load they must carry.

The location of culvert should be decided only after careful examination of conditions in the field. Culverts should be constructed where natural water-

courses cross the road or where collection of water in ditches make them necessary. Existing culverts should be used if they are in good condition and have required size of waterway. In hilly sections, however, it is sometimes considered better to construct at an angle; this affords an easier access to water and may also help in some places to obtain sufficient cover over culvert, or to bring the point of outlet to a more convenient place.

Culverts constructed of any material should be laid to good foundation. The material of which a foundation is composed should be examined, since excessive stresses are caused by settlement which the culvert is not designed to take. They should be laid true to line and grade.

At outlet, culvert should be nearly flush with ground level; if set too high, water falling from end will undermine tile. Rapid grades have same effect, those defects being overcome by paving or placing cobble stone at both ends of culvert and more particularly at outlet. Diameter of pipe should be sufficient to carry maximum flow likely to occur in a term of years.

Pipe culverts, firmly bedded on the foundation and, when of bell and spigot type, places should be cut to receive projection. If the soil furnishes a poor support, pipes should be bedded in a layer of concrete or broken stone. Back filling for pipe culverts should be composed of a selected material, firm gravel or compact sand free from large stone being best. *Great care should be taken that material is properly rammed around and under the pipe.* A head-wall should generally be constructed at both ends of pipe as this tends to shorten pipe. Sometimes, however, it is found advisable or more economical in case of culverts of large size to construct wing-walls, either straight or flared. Concrete and stone masonry is used in head-wall. Cheapness, durability and the fact that concrete is readily moulded to any form desired renders it a very satisfactory material for this purpose. Bottom of head-wall should be carried eighteen inches, or more, below bottom of pipe to prevent washing out.

When box or arch culverts are being constructed and a poor soil is encountered, it is possible to spread the footing so as to lessen the pressure on the foundation or to carry it deeper to a firmer bearing. If there is liable to be any danger from scour, the bottom of culvert should be paved; hand-placed rubble may also assist very much in lessening effect of water. If this danger is not present, the stream-bed may be made to serve as the invert. *Head-walls should be constructed for box and arch culverts.*

Vitrified Pipe.

Vitrified pipe used for culvert should be best quality salt glazed pipe of double strength type, with socket joints. Pipe is made in two foot lengths, diameter 12-36 inches. The pipe is laid in trench with socket end towards inlet, and should have 15 inches of material above highest point; joints should be filled with Portland cement 1: 3 mixture. *Under light traffic conditions* in highway work this pipe makes a fairly satisfactory culvert, but it is not advisable to use same when other material can be obtained, as life of pipe is generally short.

Cast Iron Pipe.

Cast iron pipe with bell and spigot joints have been used for some time. The pipe is generally used when lack of covering makes it necessary to put top of pipe close to surface, and where water will stand during freezing weather. This will stand practically any weight. The disadvantages are that it is expensive even in small sizes, becoming prohibitive in large: twelve feet is standard length but it is made in shorter lengths.

Corrugated Metal Tubing.

Culverts of this material are being built throughout the Province, but the first construction of this class is of too recent a date to enable us to determine the life of these culverts. It is claimed by manufacturers that they will last twenty years, but this remains to be proven.

Corrugated metal pipe is made in any length desirable, ranging in multiples of 2 feet up to 36 feet, or can be obtained in nest sections which may be bolted together in the field. Its weight is about 1/20 that of cast iron; it is consequently easily handled and transported. The nest sections are of particular advantage in this respect. Care should be taken to select pipe made of proper material. Wrought iron is superior to steel as far as its non-corrosive properties are concerned and hence pipes made of iron generally have a longer life. The non-uniformity of results obtained have been due almost entirely to the different kinds of material used in manufacture.

The advantages of corrugated metal pipe are that it can be laid within six inches of grade and may be used where soil is such that it is impossible to maintain a foundation under stone or concrete. If washed out, it can be replaced with little or no damage. The objections are, it is said to lose some of the galvanizing material when being rolled and to be liable to rust. In the larger sizes it has been quite frequently known to flatten at the top. When culverts are being built in small sizes, corrugated metal is considered by some engineers to be superior to concrete pipe.

Brick Culverts.

Brick is sometimes used for arch culverts and end walls, but possesses no advantage over concrete either in cost or durability and should not be built unless bricks are close at hand and it is inconvenient to get material for concrete. Faced brick must be used, ¼ inch joint with cement mortar 1: 3, with 515 bricks to cubic yard.

Stone.

Stone laid up in Portland cement mortar makes a very lasting and satisfactory culvert, when good sound stone is at hand and crushed stone or gravel hard to obtain. It is well to build culverts and end walls of cement rubble masonry. Abutments and wing-walls for bridges are also built of this material. Walls should be at least eighteen inches thick at top and at bottom about 2/5 total height; should be constructed of large stone, dressed to even face, free from clay seams, built in layers of alternative headers and stretchers. Walls should be carried to sufficient depth to be unaffected by frost. Below four foot span culverts can be topped by flag; larger than this should be arched, but this has one disadvantage in causing an abrupt rise in road, or necessitating long approaches. Reinforced concrete top does away with arch, makes good culvert and eliminates the bump in road. Steel of all kinds has been successfully used as reinforcing for these culverts.

Concrete.

Concrete pipes may be cast and laid as any other form of pipe. In Ontario, pipe is cast previous to laying and is made in lengths of 2½ feet with thickness varying from 2 inches to 6 inches, depending upon diameter. Circular culverts up to three feet are commonly made of concrete tile: if properly made and laid they are very durable, and, when suitable material is available, of low cost.

Proper construction requires:

(1) Concrete properly mixed.

(2) Cement of good quality.

(3) Thickness of concrete proportional to diameter.

(4) Sufficient covering of earth when laid.

(5) Culverts not to be short: and especially at road intersections, better to make length full width of road allowance.

(6) Tile should be placed with reasonable care.

(7) Good fall on a regular grade to free outlet in such a way that water will not stand in it.

(8) Tile laid with socket end up-stream and joints made tight with cement mortar. If water gets in and freezes, culvert gets out of line.

(9) Ends should be protected with stone or concrete head-walls to prevent water finding its way along pipe.

(10) Concave bed excavated for pipe to rest in, securing even bedding. Without this, heavy loads in passing over before culvert has settled, are liable to break or burst tile. Tile cannot be used for very shallow culverts; it is advisable to have thickness of earth above tile equal to diameter of tile.

Mixture of cement, sand and crushed stone in proportion 1: 1½: 3 probably considered ahead of cement, sand and pit gravel, 1: 1½: 3, but the advantages of one over other seems so slight that the available material governs construction.

Concrete culverts may be built either plain or reinforced. Only Portland cement should be used. Portland cement is made by burning and grinding together definite proportions of calcium carbonate, either in form of limestone chalk or calcareous marl, with clay or shale. When large works are being constructed, series of cement tests should be made to determine strength. However, on culverts it is generally impracticable to apply these tests on account of lack of apparatus.

Most of the brands on the Canadian market are reliable. Any cement showing signs of deteriorating, such as caking, should be rejected. It is sold in wooden barrels or cloth sacks. Barrels contain about 3.8 cubic feet, weight 380 pounds; sacks contain ¼ barrel, .95 cubic feet, weight 95 pounds. The most convenient way to handle cement is in cloth sacks. Arrangements are generally made with dealer to return sacks, an allowance of 10c. per sack being the consideration.

In treatment of concrete arch culverts, forms should be dressed and fit closely, concrete well spaded against forms to eliminate air holes. Surface should be part of concrete itself; plastering does not remedy defects. Sometimes concrete is surfaced with one inch coat of 2: 1 mixture; this is done by placing one inch lumber against forms and removing the boards as concrete is partially set, then filling in space between form and weaker cement with strong mixture. It is contended, however, that if concrete is properly spaded against forms the coarse aggregate goes to centre and a stronger mixture actually remains against the forms.

Concrete is made by mixing *cement, sand, and crushed rock; cement, gravel and sand; or cement and gravel,* in proper proportions. Any of the above proportions make a good mixture. Theoretically, concrete should be so mixed that the cement will little more than fill the voids in sand, and the resulting mortar a little more than fill the voids in stone.

For heavy work, walls, piers and abutments, 1 part cement, 3 parts sand, 6 parts broken or screened gravel. For culvert tops, bridge floors and other reinforced concrete, 1 part cement, 2 parts sand, 4 parts broken stone or screened

gravel; 1, 1½ and 3, is also considered a good mixture. In the mixture ordinarily used, the amount of sand by volume is about half that of the stone.

When wall is fairly thick, the amount of concrete may be minimized by placing large stone in wall embedded in concrete, the diameter of stone in no case to be greater than half thickness of wall, and none should appear on face. For culvert tops, bridge floors and other re-inforced work, when concrete is subject to greater strain than in abutments and piers, it is important that concrete be made stronger. Gravel should be screened, and all stone larger than two inches diameter rejected. In re-inforced concrete culvert tops, arrangements should be made to lay entire top in one day if possible, and if not, to finish each day's work with a slab the full thickness of floor and completely spanning the distance between abutments.

The amount of water to be used demands attention. It is dangerous to mix too dry: the prevailing practice is to mix concrete very wet. Although in this state it does not gain strength as soon as when mixed dry, it is easier to handle, requires less tamping and eventually becomes as strong as drier mixture.

It is better to mix concrete by batch mixer rather than by hand. However, in ordinary highway work mixers are not always available. If care is observed, concrete mixed by hand is thoroughly satisfactory. Platforms should be 6 x 10 feet in size, sufficiently large to mix half cubic yard batch of concrete without trouble. Spread dry sand on platform to even thickness, pour cement over this as evenly as possible and thoroughly mix with shovels until mixture is uniform gray colour. Then add water and mix again, add the stone to mortar and thoroughly mix, turning the whole mass at least four times. Water should be added from time to time to keep concrete wet. Shovel with square mouth blade should be used. Concrete should be placed in forms as soon as possible after mixing. It should not be dropped too far, as stone tends to separate from mortar in falling. The mortar may be placed in forms six inches at a time and special care should be taken to see that it is spaded against forms.

Never use concrete that has partly set. In leaving work over night, surface of concrete in forms should be left rough to ensure a good bond. The old surface is sometimes smeared with neat cement paste about the consistency of thick paint before adding fresh concrete.

Frost.

It is not advisable to lay concrete in freezing weather. This can be done successfully, but it is necessary to heat all materials and even then it is risky and expensive. No culvert or bridge construction should be started in severe weather if it can possibly be avoided.

Where concrete culverts have been properly built and carried to firm foundation, no heaving has occurred. In nearly every case where frost cracks or heaving has taken place, the cause has been traced to building too late in fall, water getting under concrete floor, etc.

Time of Setting.

This depends principally upon the brand of cement, the amount of water used in the mixture, *and the temperature*. In very hot weather care should be taken that concrete does not dry out before setting. It is well to sprinkle with water occasionally. On large jobs where it is desirous to use as little lumber as possible for forming, the forms are removed from walls in as short a time as forty-eight hours, or even less in special instances. On highway work this is not often necessary, and forms should be left on the wall for about twice that time. It is rather difficult

to make any set rule for re-inforced concrete, but the forms should not be removed until the concrete is thoroughly set. This is generally considered to require from 7 to 14 days. From experiments conducted by the writer on re-inforced and plain concrete, the concrete stood the greatest tension and compression test after twenty seven days setting; consequently the heaviest loads should not be allowed on structure until one month after placing concrete.

Steel of any kind, whether smooth, twisted or corrugated, may be used for re-inforcing. Some engineers take exception to use of smooth steel. The adhesion of concrete to steel is so great, however, that any steel may be used with safety. The bars are generally placed about twice their diameter from bottom of slab or beam. They should be placed close to bottom of beam in order that they shall take all the tension that may occur, and that their resisting power shall be as great as possible. All re-inforcing should be clean, free from dirt or rust. Once embedded, the bars are free from oxidation, and therefore cannot rust.

In building reinforced concrete, material is mixed as for plain concrete and placed in practically the same manner, after reinforcing has been put in place. The whole floor should be placed in one day if possible, to enable the entire slab to set as one mass. If impossible to do this, then concrete should be so placed that each day's work will form a slab.

The forming can be done with two-inch lumber. The thinner the lumber the more bracing required. The floor upon which the slab rests also should be two-inch lumber well supported. *Particular* care should be taken in building forms to get smooth finished surface. So many culverts throughout the Province have been spoiled by rough unfinished appearance. Any man who can use carpenters' tools can build the forms and any lumber that will make tight, smooth forms may be used.

Culverts of spans less than two feet can be built without reinforcing, but the saving by not reinforcing is slight. It is easier and better to build them with a solid concrete bottom than to put heavy foundation under the walls. It is best to build with flat top, which is easy to form and takes less head room. Often old steel can be used to advantage in the tops of these small culverts. Old rods, woven wire fencing, or heavy wire of any kind embedded in the bottom of the slab and in the side walls will give the culvert additional strength and help to prevent any temperature cracks.

Some of the counties through the Province have standard forms for different spans required, some being for arches and others for square or box culverts. One thing the writer noticed particularly in going over the roads was that in a great many places where culverts are being built the new structure is generally made the same span as the wooden one being replaced. We can see that this is very often not necessary and is a waste of material, when we remember that these wooden affairs were constructed with practically no thought of design or proportion. Some data should be collected to determine size of culvert required. Note should be taken of floods in previous years: the area of country the stream will be required to drain; also whether it is heavily wooded and whether run-off in spring is fast or slow.

One of the advantages of concrete for culverts and small bridges over the use of any other material is that the major part of the money expended is kept in the community. With other types of culverts money may go out of town or even out of the Province.

For instance, in building concrete culverts, etc., money spent for gravel, sand, lumber, teaming and all labour goes back into the business of the town, and local dealers get their profit on steel and cement.

No matter how well a culvert is put in or how accurately designed, it will become useless if it is choked with dirt, leaves or rubbish so that it cannot serve the purpose for which it was built.

It should be the care of the Road Superintendent in each county to see all culverts and bridges have a clear and unobstructed channel at all times. They should be cleaned with special care just before the spring breaks up so that the water can be quickly carried away as the snow and ice melt. A little care in keeping culverts open at this and other times would often result in a much quicker drying up of the roads.

Designers of both highway bridges and culverts are urged not only to investigate the safety and durability of proposed design, but to consider their æsthetic features as well. When these are constructed of permanent materials, such as re-inforced concrete, the designer should bear in mind that any æsthetic defects that may be present now will become more and more apparent as the community develops. For example, a culvert, the defects of which are hardly noticeable when surrounded by delapidated fences and buildings, may become a veritable eyesore if these features of the landscape are sufficiently improved. A design may be in excellent taste, however, and yet be almost totally devoid of ornament. A few simple panels and copings are usually sufficient to lend an attractive appearance to the structure. Special care should be given to proper proportioning of parts.

EXPLOSIVES

R. M. Smith, B.Sc.

The value of explosives is derived from the volume of gas generated upon detonation or explosion and the speed at which the generation takes place. The pressure of generated gases is equal in all directions (contrary to general belief of some practical men that dynamite strikes down). The explosives in common use in Canada are very few. Practically the average foreman is acquainted with only two kinds, black powder (gunpowder and blasting powder), and some of the ordinary varieties of dynamite. Many explosives are being used in Europe which deserve consideration, but for the most part the quarrymen of Ontario have been content to use the explosive they are acquainted with and accustomed to handling. Dynamite is sold at a cost which probably prohibits, to a certain extent, the marketing of other explosives. The results with dynamite have been such in the past that we are more concerned with improving these, than experimenting with new explosives.

The explosives are divided in the following manner: (1) gunpowder, (2) nitrate mixture, (3) nitro compounds, (4) chlorate mixture, (5) fulminate. Ammunition and fireworks might also be added.

The Nitrate Class.

The best example of this is gunpowder. The characteristics of these explosives are that they consist of mechanical mixture of nitrates with some base containing charcoal or other substance yielding carbon. The nitrates carry the oxygen which combines with the base under favourable circumstances, developing a large volume of gas at a high temperature, and if the powder is confined at the time of explosion there will be produced an enormous expansive effort.

The standard composition of gunpower is:

Potassium nitrate (nitre of saltpetre)	75 parts.
Charcoal	15 "
Sulphur	10 "

Black powder, as stated above, is a mechanical mixture; it consists of a finely pulverized sodium nitrate intimately associated with combustible materials. This intimate association of materials is brought about by thoroughly mixing and incorporating them in what are termed "wheel mills." The product is pressed into hard cakes, which are subsequently broken into smaller grains. The powder is then put in a revolving barrel where grains are rounded by rubbing together and at the same time coated with graphite, and known as "glazed." The object of glazing and rounding the grains is, that the powder runs easier and is not effected so much by moisture. The powder is divided into sizes according to the diameter of grain. One volume of powder on exploding expands 400 times, normal temperature and pressure. At the instant of explosion gases are highly heated, and tend to occupy a much greater volume than at normal temperature and pressure.

The rate of detonation, explosion, or burning, as stated before, determines the efficiency of the explosive and offers the best basis for selecting explosives suitable for various conditions. The shattering effect of sudden pressure on a given substance is very different from than produced by an equal pressure applied slowly. The quicker the rate of explosive reaction the more pronounced will be the shatter-

ing effect. The shattering effect of a commercial explosive depends on its rate of detonation. The more nearly instantaneous the explosive reaction for a given explosive, all other conditions being equal, the greater is the volume of highly heated gases it produces in unit time and the more violent the effect it exerts.

Black blasting powder, under conditions that exist in a drill hole, has been found to burn at a rate of 1,538 ft. per second. This rate is slow compared with that of "ordinary" dynamites. Blasting powder is best suited for work requiring a pushing or heavy effect. The gases from the combustion form at such a relatively slow rate that the pressure produced is prolonged, and there is a corresponding loss of heat and pressure from conduction and radiation. In order to obtain maximum efficiency with black powder the charge must be well confined by suitable tamping. The best results are obtained when drill-holes are tamped to the mouth. Black blasting powder is used in excavating cuts, quarrying soft rock or stone, and especially in quarries when large blocks of building stone are required. In some work it is necessary to spring the holes to get sufficient room for large charges of powder, and in this case it is well not to load too soon after springing, as the heat may explode powder prematurely.

Nitro Compound.

Dynamite is the most largely used of any blasting material. It was invented in 1866 by Alfred Nobel. The principle consisted of using an absorbent commonly called a "dope" which would take up the nitro-glycerine and hold it somewhat after the manner of a sponge. German earth called Kilselguhr, powdered "rotten stone," or similar porous material may be used. These materials are known as inert bases. Instead of these inert bases, active bases may be used. Gunpowder, guncotton, etc., are examples of these bases. Dynamite is then known under several names, depending upon percentage used—giant powder No. 2, rendrock, carbonite, dualin, hercules powder, gelegnite, forcite, etc.

It is not the purpose of this paper to go into the composition and manufacture of these explosives separately; it is sufficient to say that nearly all have been used with success. Dynamites are known according to the percentage of nitro-glycerine they contain—30, 40, 50, 60, etc.

There are certain requirements which all dynamites should fulfill, and it is the duty of all persons using them or handling them to see that they do not fall short of the proper standard. Good dynamite should not feel greasy. There should be no trace of free nitro-glycerine inside the wrapper of the cartridge. In order to test this point, lay one of the suspected cartridges on a sheet of clean brown paper in a room at from 60° to 80°F., for a period of 12 hours. If the cartridge has begun to "leak" nitro-glycerine, this will be shown by oily discoloration on the brown paper. Dynamite properly made should be proof against leakiness under normal conditions of temperature and moisture. To test its quality in this respect two separate determinations should be made. First freeze and then thaw sample of the dynamite three successive times and test for leakiness as explained above. Second, expose samples to a temperature between 85° and 90°F. for six consecutive days and again test for leakiness. In neither case should any trace of free nitro-glycerine be seen on the brown paper. Dynamite slowly heated explodes at 356°F., and if rapidly heated it explodes at 446°F. Some dynamite will explode at even lower temperature than these. Near the freezing point (42°-46°F.) dynamite is very sensitive to shock or friction. Frozen dynamite is not

sensitive to ordinary shock, but is slightly so to friction. It may be exploded with a very powerful detonator. Exposure to the rays of the sun, especially if transmitted through window glass, is liable to produce decomposition and explosion. A strong electrical discharge or a flash of lightening will usually explode dynamite. If the dynamite upon examination has a whitish crust it is no longer safe; this is a sign of dampness. Greenish spots also indicate that nitro-glycerine has started to decompose and is therefore unsafe. Dynamite placed in water gradually parts with nitro-glycerine, its place in the cartridge being taken up by water. In wet conditions, therefore, it should be fired as soon as possible after charging, and in no case should be allowed to remain unexploded several hours, as nitro-glycerine may leak out and find its way into crevices, where it may cause accidents later.

Nitro-glycerine, if properly purified, should have no tendency to decompose if kept at a temperature below 110°F. It may be destroyed by spreading over large areas and burning, or by chemical action. The volume of gas produced upon explosion compares with gunpowder in the ratio of 13: 1.

Nitro-glycerine is said to burn at rate of 14,920 ft. per second.

Detonators.

The explosion of blasting powders is accomplished either by the direct application of a high temperature, unaccompanied by a shock, as in the firing of gunpowder by a fuse, or by the application of a very powerful shock in which the high velocity of the explosive wave is of more consequence than the temperature, as in the explosion of dynamite by caps or detonators loaded with fulminating compounds. The detonator may be exploded electrically or by fuse. Safety fuse consists essentially of a powder-thread spun around with jute yarn, and impregnated with composition to make it waterproof. The rate of burning is about 1 foot in 30 to 45 seconds. It should be remembered, however, that this fuse is only moderately waterproof. For blasting under water special gutta-percha covered fuse is manufactured. Safety fuse is sold at about $6.00 per 1,000 ft. In order to accomplish simultaneous firing of a number of holes with fuse instead of by electricity, quick burning fuses are made by coating a wick with meal powder paste having yarn loosely spun over it. The several fuses of equal length are attached to sheet iron connector, in one end of which is a disc of powder and a perforated wooden plug for the insertion of an ordinary safety fuse. This fuse has only limited success in the United States, and has not been introduced into Canada. In military work an "Instantaneous Fuse" is used successfully at present time. It is fired in the same manner as described above.

For use with high explosives a detonating cap is essential in order to impart a sufficient initial impulse to develop the full strength of the powder. Detonators contain the powerful explosive, fulminate of mercury, which is enclosed in a copper tube out of contact with the dynamite. The detonation of the fulminate pulverizes the end of the tube so that the temperature resulting from it is communicated to the explosive, but it is the violence of the shock that is relied upon to start the detonation of the high explosive.

Electric fuse is used for firing under water or for exploding a number of charges at same time. With this fuse the copper cap is sealed by a plug of melted sulphur and powdered glass. Exploding charge by electricity is considered the most efficient and by far the safest method.

For these detonators various quantities of the fulminate of mercury are employed. The ordinary detonator, whether made for firing by fuse or electricity, contains usually:—

Mercury fulminate	80 parts.
Potassium chlorate	20 "

Detonators are graded according to the amount of mercury fulminate in the composition, as follows:—

No. 3 Cap	8.33 grains.
No. 4 Cap	10.03 "
No. 5 Cap	12.34 "
No. 6 Cap	15.43 "
No. 7 Cap	23.15 "
No. 8 Cap	30.86 "

No. 6 Cap, known as double strength cap, is the one most used in all work and gives the best results; they are sold at about $1.05 per box. Electric fuse run about 5 cents apiece on the job.

Quarrying.

The engineer and quarryman are more concerneed with the selection of explosive to get the most efficient results. For rock in highway work, the low freezing dynamites are probably the best adapted. Where a strong smashing action is desired the nitro-glycerine grades can be used, and where more of a spreading and heaving action is necessary blasting powder will give the best results.

Mistakes are often made in regard to producing rock for macadam. If the rock is hard and flinty a high explosive breaks it into pieces or spalls, full of flaws, and the additional fracturing in a stone crusher renders it unfit for heavy traffic because it grinds down too quickly. A milder explosive causes fewer small fractures and the life of the macadam is much prolonged.

General rules that should be followed:—

(1) Do not allow cartridges with caps attached to be scattered around.

(2) Dynamite should not be packed in the same box with caps or fuse, and they should never be brought together until ready to use.

(3) Avoid bringing matches or other easily cumbustible substance near an explosive.

(4) Avoid the use of hard or rigid tools. Copper is the only metal which may be used about explosives.

(5) Use only quantity of explosive necessary for work in hand. Keep main supply well removed from vicinity of work, well protected from fire or shock and from being handled by unauthorized persons.

(6) In transporting nitro-glycerine, guncotton (dry), dynamite and gelatine, it is necessary to have an elastic bed of hay, straw or excelsior to deaden the shock in travelling.

(7) Never prepare a dynamite primer near nitro-glycerine compounds, or explosive gelatine.

(8) Before firing, warning should be given to all persons.

(9) In case of misfire, do not make haste to investigate cause. Wait at least twenty minutes; then, when satisfied that no explosion will take place, remove as much of the tamping as is safe, say to within 2 or 3 inches of charge, first having disconnected the wiring if electric battery is being used. Put in new primer with a small charge of high grade explosive, retamp and fire, the small charge setting off charge below.

Thawing.

To thaw dynamite two vessels should be employed, one sitting inside the other: then cartridges are placed in the smaller one. Use warm water in which you can place your hand, not above 125°F. *Never use boiling water,* and do not set near fire to keep warm. Another method is to put it in a box containing horse manure.

The best way is never to allow it to freeze, but to keep it in a warm room at summer heat, covered up and dark as possible, away from sun's rays.

Any dynamite that is not perfectly pliable has still some frozen parts, and is dangerous to use.

Loading.

Black blasting powder, after bore-hole has been cleaned, is placed in bottom and tamped with a *wooden rammer.* Fuse should reach some distance into charge and be carefully tamped in place; it should not be cut to required length until ready to fire. The entire charge should be well tamped, using dry sand, moist sand, fire clay, etc. Proper tamping very much increases the efficiency of the charge.

Dynamite charges are placed somewhat the same as powder, the first sticks being pressed into bottom of hole, then primer with fuse attached as near centre as possible. The remainder of the charge is added, and finally tamped with clay or sand: ground brick also may be used. Many quarrymen contend that placing the primer on top or bottom gives just as good results. When firing with electric fuse, care should be taken to properly connect lead wires to fuse, *but never connect lead wires to battery until ready to fire.* To prepare the primer when firing by safety fuse, cut end of fuse squarely across and place in cap, first making sure that fuse is perfectly dry. Be careful that, when pushing fuse in cap, no twisting occurs. The fuse should just touch the fulminate or the varnish protecting it. Then with a pair of crimpers (*and not with the teeth*) fasten the cap on fuse. An opening is then made in the dynamite stick with a wooden plug and fuse placed in this opening. The cap should touch the dynamite on all sides, since any space around it causes a cushion of air and lessons effect of detonation. The fuse is firmly tied in place. If the primer requires to be waterproof, this may be done by using soap, tallow or wax. The string holding fuse in place should be of sufficient length to lower primer to bottom of hole. *It should not be let down by fuse.*

Mudcapping.

When blasting boulders by mudcapping them (also known by several other names), the charge of dynamite is packed closely against the surface on the top or side of the boulder, covered with mud, and exploded. The charge should be placed on the spot which would be struck with a sledge if the boulder were small enough to be broken in that way, and should be packed in a solid mass by slitting the paper cartridge shells and massing them together, taking care not to spread

them over the surface of the boulder any more than absolutely necessary. A blasting cap crimped into fuse should be placed in the middle of the charge and the whole covered with six inches of damp clay or sand. This should be pressed firmly over the explosive, care being taken not to cover the outer end of the fuse. If the boulder is deeply embedded in the ground it is best, before blasting, to dig away or loosen some of the earth surrounding it.

If the boulder is cracked or seamy, the charge should be placed in some depression and covered with a quantity of clay or sand, as described before: this gives the explosive greater power.

A test made by Bureau of Mines at Washington to determine the effect of drilling and tamping holes in boulders, showed that a 1 inch hole 12 inches deep, with 1 ounce of explosive, had practically same effect as 1 pound of unconfined explosive laid on the rock. The conclusion is that where time it not the principal object it is more efficient to drill.

However, we can only balance cost of drilling against cost of explosive. Three sticks of dynamite will practically cost the same as a 6-inch hole.

Stripping.

The rock in quarries is generally covered with a layer of earth which it is necessary to remove before blasting or separate from stone after blasting. This stripping will vary with the character of soil, depth of cut necessary, and the distance to which the material has to be moved. In estimating cost this may be considered as ordinary earthwork.

Drilling.

This may be done either by hand, with steam, or compressed air. The two first named methods are generally used in Ontario. However, portable air compressors run by gasolene are used extensively in the United States. One with an air cylinder 8 x 10 inches gave 96 cubic feet of free air per minute at 165 revolutions, with 80 or 100 lbs. air pressure. A hoisting attachment for pulling rock from trenches, etc., was also connected on rear of machine. The entire outfit weighed about 8,000 lbs. Three hammer drills were used, each averaging 50 ft. per day. The cost per foot was approximately 14 cents.

In limestone, drilling by hand costs anywhere from 35c. to 45c. per foot. Drilling from steam costs from 20c. to 30c. a foot. In granite these prices are increased 25 to 30 per cent. In limestone three men will probably not drill more than 15 ft. per day. The steam drill will average about 45 ft. per day. In granite and trap rock these are correspondingly decreased 25 to 30 per cent. The estimates given above are for $1\frac{1}{4}$ inch steel.

Blasting.

There are few operations in quarrying where a workman can display a higher degree of skill and effect larger economies than in the proper placing of bore-holes, and in the proper adjustment of his charges to the work to be done. Against the firing of one hole the following may be charged: labour, power (steam or air) where machine drills are used, wear and tear on plant, explosives, and a general loss distributed among many items in the operation of the quarry.

For the most part efficient work in blasting is a matter of experience and good judgment. This cannot be taught in books, but there are general rules which are fundamental, and in proportion as these are understood and appre-

ciated the work of quarrying will be conducted with greater system and economy. Unsystematic efforts are always wasteful and costly, and system implies the recognition of some definite principles according to which the work is laid out and prosecuted:—

(1) The strength and quantity of the explosive should be properly proportioned to the cohesive strength or resistance of rock.

(2) The "burden," the shortest line that can be drawn from the charge in the bore-hole to the outer free face of rock, should bear a proper relation to the strength of the explosive and to the resistance of the rock.

(3) If the working face of rock is so blasted as to leave two or more free faces instead of one for future blasts, the explosive required to overcome the resistance of the rock will be reduced.

(4) A seam or fissure may become important help, if hole is properly located, but the opposite may occur if charge is improperly placed.

(5) Breaking to regular benches and faces is the most economical method: rock can be carefully observed for seams and fissures, admitting of a more intelligent placing of subsequent bore-holes.

(6) Simultaneous firing is more economical in most cases than firing singly or in series, for the reasons that the adjacent charges assist each other, reducing the amount of explosive required and the total length of holes to be drilled for any given volume of rock.

(7) Careful charging and tamping is absolutely essential. The more compact the charge the more efficient the results.

(8) The object in quarrying is to rupture rock, not to hurl it some distance. Hence only enough explosive should be used to accomplish this. Where rock is thrown a great distance, it is evident that the proper relation did not exist between the charge and the burden, and that too large a charge was used for the length of the line of least resistance.

The amount of explosives required depends upon:—

(1) Kind of explosive used.
(2) Depth of bore-hole.
(3) Line of least resistance.
(4) What stone is being used for.

The amount of 40% dynamite required by a cubic yard of rock excavated varies from the depth of the hole, decreasing as the depth of the hole increases. In open cut work we must use the formula $P = \frac{3}{d}$, in which P is equal to the pounds of dynamite required for cubic yard of rock and "d" = depth in ft.

The holes are generally spaced equal to their depth, but after 5 ft. in depth we may use the formula as $= \frac{10}{4}\sqrt{d}$ (s = spacing; d = depth).

ASPHALTIC DEPOSITS

W. H. Losee, B.Sc.

Asphalt is not new. It was known to the ancients. History tells us that it was used as a cementing material in the building of the Tower of Babel. We also read that Noah used pitch when building the Ark, and that Moses was preserved from death at the suggestion of the Egyptian Princess, in a basket rendered waterproof by bitumen.

About the year 1838, asphalt was first used as a paving material and the first sidewalks of that material were laid in Paris. Since that time it has become more and more used until it is now one of the chief constituents of the finished boulevard.

Asphalt in some form is found in many countries. The most noted deposits are in France, Sicily, Germany, Switzerland, Cuba, Trinidad, Venezuela, United States and Mexico. It is also found in Canada, but it has not been developed to any great extent as yet. The European mines have been operated for many years, while the mining in Trinidad, Venezuela, United States and Mexico is more recent.

Rock asphalt is a natural product and consists of limestone impregnated with pure mineral bitumen. Its ideal composition is 80 to 90 per cent. of pure limestone and 10 to 20 per cent. of pure mineral bitumen. Bitumen is natural mineral pitch composed of 85 per cent. of carbon, 12 per cent. of hydrogen and 3 per cent. of oxygen.

The natural rock asphalt from the different mines of Europe is crushed and reduced to small pieces, passed through a disintegrator and reduced to a powder. It is then screened through a 20 mesh sieve, nothing being added or taken from the powder obtained by grinding the bituminous rock. The powder should contain not less than 9 per cent. of pure natural bitumen. When it is about to be laid, it is heated in a suitable apparatus from 200 to 250 deg. F., and must be brought to the streets at a temperature of not less than 180 deg. F., in carts made for the purpose, and carefully spread to such a depth that, after having its ultimate compression, it will have a thickness of two inches. The surface is rendered perfectly even by tamping, smoothing, and rolling with heated appliances. This surface should invariably be laid on a foundation of Portland cement concrete.

Trinidad.

Perhaps the best known asphalt is that which comes from the Island of Trinidad off the north coast of South America. This deposit occupies a bowl-like depression and covers about 114 acres. The centre of the deposit is about three-quarters of a mile from the shore and about 135 ft. above the level of the sea, It is hard enough, except in certain places, to bear the weight of carts and mules by which it was first transported to the vessels.

The asphalt is mined by picks either at night or in the early morning, when it is hard and brittle. As mentioned above, it used to be loaded into carts to be carried down to the sea shore but at present the hauling is facilitated greatly by the use of an aerial tramway. When the vessel reaches the port where it is to be unloaded, the asphalt must be picked out of the ship's hold, as it consolidates during the voyage.

This deposit is called Pitch Lake and it resembles a lake in many ways. It has a shore line of vegetation. It has been bored at different distances from the shore and it is found to get deeper towards the centre, where it was bored to a depth of 135 ft. with no sign of bottom. It is in constant motion owing to the evolution of gas, and for that reason, whenever a hole is dug in the surface, it rapidly fills up, and the surface resumes its original level after a short period. Accurate levels have been taken and it is found to be somewhat higher in the centre than at the sides, which shows that the lake is fed from the bottom by springs.

This viscous mass flows gradually toward the sea, not over the edge of the lake but through a fissure it has found on one side. After passing through this opening, it spreads more or less over the land, and is called land asphalt, to distinguish it from that which is mined in the lake.

Venezuela.

Another deposit of interest is that of Bermudez Lake, Venezuela. It is about 105 miles due west of the Trinidad Pitch Lake. It lies about 20 miles in a straight line from the sea shore, but by the San Juan and Guanaco Rivers it is some 40 miles.

The San Juan is a deep wide river, and, although there are only about nineteen or twenty feet of water over the bar at the mouth, the water in many places is 100 feet deep. From the San Juan branches a smaller river, the Guanaco, and three miles from this junction is the wharf along which steamers drawing 18 feet of water can take on their cargo. The wharf is about five miles from the lake and is connected by a narrow gauge steam railroad.

The lake itself covers an area of 1,000 acres, being nine times the area of Pitch Lake in Trinidad. This does not necessarily mean that there is more asphalt, because there are many places where the lake is only from two to ten feet deep.

There are many springs from which new material is constantly exuding, the largest being about seven acres in area. Outside the springs, the surface is covered with vegetation and trees, which must first be removed to reach the asphalt.

The quality of the asphalt varies from the maltha or liquid asphalt to the hardest glance pitch, which has been caused by fires that, during the dry seasons, sometimes sweep across the lake. Its composition differs considerably from that of Trinidad. The crude Bermudez asphalt contains water but is present as a mixture and not as an emulsion. In percentage the water varies from 10 to 40 per cent., averaging 31 per cent., whereas in Trinidad asphalt, the quality is constant at 29 per cent. The mineral matter also varies from less than 1 per cent. to more than 3 per cent., while the organic matter varies from 1 to 3 per cent.

In this case, as with Trinidad asphalt, the only element to be eliminated is water and this is done in the same manner, i.e., by heating.

The asphalt, although much softer than Trinidad, is dug in a similar manner and loaded into small side dump cars running on a portable track. These cars are pushed by hand to the terminal station on the shore of the lake, where they are dumped into boxes contained on flat cars. These cars are then taken by the locomotive to the wharf, where the asphalt is dumped into vessels or piled on the shore.

California.

The asphaltum deposits of California are confined to a narrow strip of territory near the coast and extend, broadly speaking, from San Francisco on the north, to Los Angeles on the south. They consist either of sandstone impregnated with bitumen or of asphaltic oil mixed with sand. In common parlance the former is hard asphaltum, the latter soft, a condition due in one instance to loss of volatiles and to their retention in the other. By far the greater part of California asphaltum aside from her extensive fields of asphaltic oils is in the form of bituminous rock and the percentage of pure asphaltum is remarkably uniform, averaging from 15 to 20 per cent.

A deposit of asphalt situated about 8 miles west of the City of Santa Cruz covers an area of 5 or 6 square miles and was opened up 35 or 40 years ago. It occurs in a marked belt about 50 feet thick at an altitude of eight or nine hundred feet. The outcropping is covered from 50 to 100 feet with shale and is dull gray in colour, the result of fading through long exposure to the elements. The freshly broken product is glossy black or brown. The mining process consists first in stripping it, which is done by dynamite and scrapers, then the asphalt is loosened with more blasting, and then carried direct to the steamer landing, where it is shipped to San Francisco and adjacent cities to be converted into pavement.

About three years ago an extensive soft deposit was located in California which has proved to be exceptionally good for roadmaking purposes. It was once an oil lake that became entirely absorbed by sand that drifted in, in almost the precise percentage of coarse and fine material required. It runs about 20 per cent. pure asphaltum so that approximately only 10 per cent. of mineral aggregate needs to be added for roadmaking. The average daily output varies slightly with the temperature of the air. A warm day very perceptibly softens the already soft deposit and the viscous mass can be cut much more readily.

Texas.

A good roadmaking bituminous limestone averaging about 15 per cent. bitumen, has been found in Uvalde County, Texas. The size of the deposit has not been ascertained but this could readily be accomplished by drilling. A cross section of the face of the quarry would show us about 3 or 4 feet of barren rock at the top, beneath this a zone one or two feet thick of brownish rock which breaks more easily than the richer portions below, finally, the bitumen-bearing bed of high percentage, 18 feet in full depth to the floor of the pit. The material from this mine has been used for 200,000 square yards of street pavement in San Antonio, Houston and other Texan cities. The heavy freight rates have prohibited its use in the east.

Kentucky.

Sandstone, impregnated with bitumen, is found in Kentucky but, like California and Texas, it can only be used in the vicinity in which it is mined, because the heavy freight rates prohibit the hauling of so much natural material as sand or limestone. These can generally be supplied on the ground where the refined bitumen is used.

Canada.

Deposits of asphalt in Canada are not as numerous as in the more southern countries; nevertheless it has been located in several places.

The petroleum of the Western Ontario oil fields carries some asphalt, but it has not been recovered as yet in large enough quantities to be of any economic value.

In Western Canada, in the Province of Alberta, large areas of what are called tar sands lie along the Athabasca River. These were visited by Dr. Bell, of the Dominion Geological Survey, in 1882. He found that in some places the banks of the river were from 100 to 150 feet in height and, where they had been exposed to the weather for some time, they generally looked as black as coal. A thick tar could be seen draining out of the deposit and collecting in pools on the ground floor at the foot of either bank or flowing in sluggish streams to lower levels among the peaty materials in the woods.

The surface of these accumulations of tar is usually covered with a hardened pitchy crust. The boatmen on the river break through this crust in order to collect the underlying tar which they would boil down and use for pitching their craft.

His analysis of the material is as follows:—

Bitumen	12.42%
Water mechanically mixed	5.85%
Silicious rock	81.73%

From the analysis it would seem that this would make a good paving material, but unfortunately it is so far away from large centres that costly transportation would prohibit its use. However, when railroad facilities to the Peace River country become better, there is little doubt but that our western cities will have an asphalt paving material which is "Made in Canada."

PROCEEDINGS

OF THE

Twelfth Annual Meeting

OF THE

Ontario Good Roads Association

1914

Appended to the Annual Report of the Commissioner of Highways

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To the Honourable J. O. Reaume,

Minister of Public Works, Ontario.

Sir,—I have the honour to transmit, for publication as an appendix to the Annual Report of this office, the proceedings of the Twelfth Annual Meeting of the Ontario Good Roads Association held in the York County Council Chambers, Toronto, on Tuesday, Wednesday and Thursday, February 24th, 25th and 26th, 1914.

I have the honour to be,

Sir,

Your obedient servant,

W. A. McLean,

Commissioner.

Parliament Buildings, Toronto,
17th April, 1914.

Ontario Good Roads Association

TWELFTH ANNUAL CONVENTION

Tuesday, Wednesday and Thursday, February 24th, 25th and 26th, 1914

FIRST DAY

Tuesday, February 24th, 1914

Morning Session.

N. Vermilyea, Esq., Belleville, Ontario, in the Chair.

THE CHAIRMAN: The first item on the programme this morning is the report of the Executive Committee, and I will call upon our Secretary, Mr. George S. Henry, M.P.P., to give the report.

REPORT OF THE EXECUTIVE COMMITTEE.

BY GEORGE S. HENRY, ESQ., M.P.P., SECRETARY.

Mr. Chairman and Gentlemen:

The Executive has held three meetings during the year just past.

First, on Thursday, September 25th, 1913, and on the following morning. At this meeting took place a general discussion covering the needs at the present time and the prospects in the near future. Mr. S. L. Squire, second Vice-President, was delegated to attend the Good Roads Congress held in Detroit about October 1st, 1913. The President, Mr. N. Vermilyea, was delegated to represent this Association at the Convention of the American Road Builders' Association held in Philadelphia in December last. He was also instructed to extend an invitation to the American Road Builders' Association to hold their next convention in Toronto.

The second meeting was held on January 21st, 1914. At this meeting Mr. S. L. Squire gave an account of the Good Roads Congress in Detroit, and the President, Mr. N. Vermilyea, reported his attending the Convention in Philadelphia. A general discussion took place as to what should be presented to the Ontario Highway Commission at its sitting on the following day. Mr. Vermilyea and Mr. McKay were delegated to present the views of the Association, which may be outlined as follows:

1. (*a*) That the designation, improvement and maintenance of highways be under the provisions of the Highway Improvement Act.

(*b*) That the highways designated for improvement be classified as main roads and County roads.

(*c*) That all work undertaken be in accordance with specifications approved by the Provincial Public Works Department.

2. That Township Councils be required to appoint a Highway Commissioner to hold office the same as a clerk and treasurer.

3. That members of Township Councils should be nominated for election as Reeve, Deputy-Reeve and Councillors, Members 1, 2 and 3, or as the case may be.

4. That the use of wide tires be made compulsory on all improved highways.

5. That an additional tax per horse-power be levied on motor vehicles and that the Supplementary Revenue Act be amended to increase the taxes payable by railways, the revenue thereby created to provide a fund for maintenance of improved highways.

Moved by Mr. Parsons, and seconded by Mr. Sanderson that the foregoing be the report of the Executive. Carried.

Mr. W. A. McLean, Engineer of Highways for the Province, and the Secretary were asked to prepare the programme for the annual Convention, the date of which was set for February 24th to 26th, York County Municipal Buildings, East Adelaide Street, Toronto.

The President (Mr. N. Vermilyea), Mr. S. L. Squire, Mr. J. A. Sanderson, Mr. K. W. McKay and the Secretary spent a day in Ottawa discussing the granting of aid by the Federal authorities towards Good Roads. After much discussion with many members of the House representing both parties, we were satisfied that nothing is to be expected at present.

The third meeting of the Executive was held on February 23rd at the Queen's Hotel. At this meeting the report of the Deputation to Ottawa was received. And this whole report was adopted.

PRESIDENT'S ADDRESS.

N. Vermilyea, Esq., Belleville.

Gentlemen of the Good Roads Association of Ontario:

It is my pleasant privilege to welcome you to the Twelfth Annual Meeting. I think it is one of the promising signs of the times that busy men who are engaged in the different callings of life as you are, can find time to support this Association and travel hundreds of miles that you may discuss a question pretaining, not particularly to your own business, but that you may consider questions of great import to the general public. It seems to be an unselfish thing and one full of encouragement that men can forget themselves, as the members of the Good Roads Association are doing and as the men connected with the Associated Boards are doing, and seek at considerable self-sacrifice to promote that which will contribute not to their own but to the public advantage, and do it without fee or expectation of reward.

Another feature of this Association to which I would like to allude is that it is a purely non-partisan organization. I take that to be a very promising feature.

Nothing of very great moment has transpired during the year to which I should make allusion except the appointment of the Highway Commission. Most of you know the gentlemen who constitute that Commission. You know something of their capabilities and I think you will agree with me in saying that we may hope for a very thorough and satisfactory report, and you may expect that the Government will faithfully carry out the main, if not all their recommendations.

We have felt in other years (and I am sure the feeling is universal) that the Public Works Department of Ontario is giving good, impartial and faithful service to the public. That has been true whether the head has been a Liberal or a Conservative. I think the Department has concentrated itself to a straight line of action and that line of action is what it conceives to be the public interest. It is a matter for regret that the Dominion Government does not think it wise to reintroduce the Highway Bill. That was the one reason why we visited Ottawa, because we had hoped at that time that the gulf that divided the political parties might not be so wide that it could not be spanned, but we found when we reached Ottawa that both parties were very decided. While we did not think it was the function of the Executive of the Good Roads Association to allot the blame, yet we do feel, and I am sure you all feel, that it is a great pity that in a matter of such crucial importance to the Province of Ontario the political parties cannot get together. One of the leaders of the political parties said, while we were visiting Ottawa: "I am willing to vote $50,000,000, the amount you ask in the resolution of the Good Roads Association, if they will put in the measure that the money shall be distributed according to population." That was the very point upon which the parties divided down there. I have no doubt that in the near future they will get together, but the Secretary has said in his report there is no likelihood that any grant can be made during the coming year.

It is a matter of vital importance to this country that good roads should be built everywhere. It is a very striking feature of the situation that there have been spent upon railways $681,000,000, while upon the highways the public money of both Province and Dominion amounts to less than $10,000,000. That is to say, the men who produce have had given to them less than $10,000,000 to carry their products to the market and the middlemen have had $681,000,000 given to them by the various Governments of the Dominion and Province to carry what they have to sell upon the railways to the destiny they seek. A road expert of considerable distinction has given it as his opinion that the cost of carrying a ton of produce a mile upon the highways of Canada is 25c., and the cost of taking it over the railway is 1c. per ton per mile. The cost of carrying a ton of produce over the highways of England is 8c. per mile. I cannot conceive of any more direct way in which the Governments of the Province and the Country can help the farmer—and everybody recognizes that the farmer should have special consideration at this juncture—than by reducing the cost of carrying his produce from 25c. per ton per mile to 8 c. per ton per mile.

I think it is generally recognized that there have been few periods in the history of the Province in which the difference between the income and expenditure on the farm has been less than it is to-day. I think that is the general impression; that is my experience at any rate, that the balance between the revenue and expenditure on the farm has been seldom less than it is to-day, and it is generally attributable to a question that is quite beyond the help of any government, namely, the high cost of labour.

The resources of the Government in the way of taxation have not been, by any means, exhausted. The railway taxation ought to be largely increased and I wish to draw your attention to a few points in that regard. I would like to contrast the railway system of Ontario with that of Michigan. The number of miles of railway in Ontario is 8,321 and the number of miles of railway in Michigan is 9,200. The gross railway tax in Ontario is $790,093; the gross railway tax in Michigan is $4,377,000. It seems to me that should turn the eyes of the Govern-

ment in the direction of railway taxation. Railways pay in Ontario $93 per mile and in Michigan they pay $475 per mile. Take the St. Clair tunnel, half of which is in Canada and half in the United States. Ontario collects $700 taxes upon the half of the tunnel that is in Ontario, and Michigan collects $26,875 on the other half. Don't you think that is a matter that deserves some consideration? The municipal tax upon railway property is ten times less than it is upon the ordinary farm property of the country.

I think it is a subject for congratulation that we are making progress. There seems to be a very sharp line drawn, however, between the farmer and the automobilist. The farmer builds the roads in rural parts and the automobile comes along and uses them in common with the farmer, and that condition of things is going to be remedied. The automobile itself is quite a harmless instrument—a broad, soft tire, but the rapitity with which it is driven upon our roads makes it a regular road-smasher. When the roads are muddy, it splashes the mud into the ditches, and when they are dry it takes off the protecting surface of the road and flings it into the neighbouring fields. Heavier horses are coming into common use, and I am doing something to increase that condition. The heavy horse means a heavy load behind him, and if that heavy load and that heavy team are put upon the highways when the road is soft, no matter how good the condition of the road is, the narrow tire simply cuts into it, and the wide tire has got to come in the near future, and I hope legislation will be brought in this year in that regard.

I do not think there is any reason to despond notwithstanding the fact that we are not likely to get Dominion help this year. We can rest assured that sometime the grant will come. "Another day, a brighter sun shall shine," someone has said. A politician in older days said, "Why do we leave our homes and business and social life with which we are connected and come to Parliament and bear the burdens incident to parliamentary life? Is it to help the rich? No. The rich in any country can help themselves." But he said, "I come to Parliament, as do scores of men on both sides of the House, not for our own personal betterment or to help the rich, but we do it in order that we may send sunshine and comfort into the humble cottages of England." And I take it that we are here not for our own personal gain or interest but to contribute by our presence and influence, and by our ability to mitigate the condition of the people and to help those who are weary and footsore in travelling the highways of this Province to a better condition in life, and thus to do something for the good of mankind. I thank you for the courtesy of your hearing. (Applause.)

Moved by Mr. McKay, Elgin, seconded by Mr. Lush, Peel, That A. M. Chapman of Belleville be appointed auditor to act with an auditor appointed by the Preseident to present a financial report at this session.

The Chairman: I appoint W. E. Tummon, Reeve of Huntingdon, auditor. Carried.

Committee on Resolutions.

Moved by Mr. Squire, seconded by Mr. Kennedy, That the Wardens of Counties who happen to be present and the movers of resolutions constitute the Resolutions Committee. Carried.

The Chairman: I have now pleasure in calling upon Mr. Squire for an address.

ADDRESS.

S. L. Squire, Esq., Waterford.

Mr. Chairman and Gentlemen of the Convention:

We are lead to believe that the undertaking of every great reform or movement has been accompanied by some sacrifice. When the Magna Charta was given to the people of England and other like reforms it cost the heads of kings. The liberation of the slaves in the American Continent cost a bloody war and the expenditure of a great deal of money. In fact, the people of the United States not only gave of the best of their men but the financial position of that country was brought almost to a state of bankruptcy. They did all this in order that they might obtain for the black man the liberty he now has. The gospel of peace cost the crucifixion of a Christ, and we know that the principles that were proclaimed by that Christ have only been given to us by the sacrifice of a great many martyrs. Is it then strange to argue that if we hope to accomplish much in any great reform, it can only be done by sacrifice? I do not wish to contend that the sacrifice is always in proportion to the good we obtain. The question which follows is this—Is the Good Road Movement of sufficient importance to demand sacrifice, and if it is of sufficient importance to demand a sacrifice, what can we expect that sacrifice to be? If the Good Roads Movement is as important as this Association believes it is to the people of Ontario, then we cannot expect that it will be different from other great movements or reforms. I believe it is an important movement, and just how important it is depends possibly upon our viewpoint.

Roads are a necessity. Trails are but forerunners of settlement. Roads are the mark of civilization and the higher the civilization, the higher the standard of the roads. Ontario demands better roads to-day than it ever had before, not only because it has reached a higher point of civilization, but because the demand upon the roads is greater than ever before in its history. The prosperity of a country is largely measured by the ease of its transportation, and the primary factor in transportation is the road which leads from the producer to the market towns. I believe there is nothing that affects rural Ontario to-day to the same extent as do its roads. Let us consider rural Ontario as it stands to-day. Statistics show us that the rural population of old Ontario has decreased in the last ten years about 100,000 people. The Province has not decreased in population, but the rural population of old Ontario in the last ten years has been in its cities and in Northern Ontario. A quarter of the people have been lost to the rural sections of old Ontario; 25,000 men have been lost to old Ontario during the last ten years. What does that mean? If we consider that the average earning power of an able-bodied man in Ontario is $600 per year—and that is not a high average—that would be equal to a capitalization of $10,000 invested at 6 per cent. Now let us capitalize the loss to rural Ontario in men in the last ten years and we will find that the loss, if capitalized, would amount to no less than $250,000,000 and that would mean an earning power of $15,000,000. That is what the rural part of old Ontario has lost during the last ten years. What does that mean? It means not only that we have lost the value of the men, but we have lost value in the farms. Our president informed us last night that in his section of the County of Hastings, farms have lowered in value in the last five or six years. We know that is not true throughout Ontario, because

there are sections where farm values have maintained their high standard. In addition to the loss of men, Ontario has lost in farm value and we have lost all along the line.

What has been the cause of this great leakage, and how can it be stopped? I know that there are a great many reasons why we have lost in the rural sections in the last ten years. It has not been because there is less labour there than there was ten years ago, nor is it because the labour has been rewarded to a less degree than it was ten years ago. I believe you will find that men have left the farm for the city because they have been faced with a splendid isolation for three or four months in the year owing to the very bad roads, and you cannot blame any young man who feels that sometimes he wants to get away from himself and to reach town or some large centre.

Do these young men do better when they get to town? No. If we can look into the average life of the men who live in the city, we would find that the man who leaves the farm and goes to the city does not make ends meet, but he likes to live in the city because he can go up and down the street on a good pavement and he has easy means of transportation. I believe if we make it easier for the man upon the farm to get to his market town or to get to his church or social centre, and if he can cut down the time which is required to make the trip, we will make farm life more attractive.

I think it is the concensus of opinion of everybody in this meeting that we want better roads. When the cost of these better roads is considered, some men hold up their hands in holy horror. Good roads are expensive, but I contend that bad roads to a country like Ontario are far more expensive.

Some of you may have seen an article which appeared in the "Country Gentleman" last week, in which it stated a Commission had been appointed by the City of Minneapolis to obtain the loss occasioned by bad roads in that section of the country. During the year 1911, this Commission interviewed 4,000 farmers who were living within 25 miles of the City of Minneapolis and from the evidence that was given by these 4,000 farmers, they found that there had been a loss to the farmers of that section for that one year of $680,000 by reason of bad roads. That was made up by breakage and the increased time required in order to make trips and by the deterioration of the produce that was carried to the market over the rough roads. In addition to that there was the loss to the manufacturer in the City of Minneapolis in taking his produce to the farms, and it was contended by that Commission that the loss within a radius of 25 miles of the City of Minneapolis in the year 1911 amounted to a sum of not less than $1,400,000. What was true of that section would be true of Ontario. I believe we, as an Association, will not have completed our work until we make it possible for the people of this country to go from place to place much more easily than they can at present.

We spoke of the sacrifice that would be required. I wonder what we mean by that? Men, I believe that until we sacrifice selfishness upon the altar of the common good, we cannot expect what we are hoping for in connection with good roads. Selfishness of the farmer! Yes, he can be selfish, too. How often we have talked to farmers about better roads and they say, "I am not interested in it because that road is not going to pass my place." Because the improvement is not going to be immediately in front of his gate, he is not going to help it along; he is going to be selfish. The farmer is selfish because he believes all this agitation is for the benefit of the man who has a motor, and he says, "I can afford

to pull my team a little harder just for the sake of seeing the man who has a car stuck in the mud." That selfishness on the part of the farmer has got to be sacrificed upon the altar of the common good. The farmer is not alone in the matter of selfishness. We find the motorist is desirous of having the roads improved—for what purpose? We have been told that they want roads from the American border to Ottawa and from Ottawa to Toronto and from Toronto to Windsor that there may be an inlet and outlet for the American motorists for pleasure. The motorist is selfish and he must take a larger view of the question of the improvement of our highway, and I think his selfishness should be sacrificed on the altar of the common good.

Then we have the politician who considers the party advantage before the public good. Both parties are reckoning on the opportunities and benefits it will give their party, more than they are the public benefit that will be derived. If they can make it appear that they are working for us, and if they can pull the wool over our eyes and retain our allegiance and get the advantage for their party, they are satisfied. Party advantage and party expediency must be sacrificed upon the altar of the common good, and until that is done we cannot expect to accomplish all we are hoping for in connection with good roads.

What can we, as an Association, hope for in connection with this matter? I believe we can hope that the flame which is kindled here will create such a consuming fire that this selfishness, no matter where it comes from, will be placed upon the altar and will be consumed by the fire—until all the dross will be consumed and the gold only will be left—and then the roads will be built.

In conclusion I wish to say that I believe these things are possible if we will only sacrifice our selfishness. Good roads are absolutely necessary if we are going to maintain the present position of Ontario. The greatest asset of our country to-day is not its timber or its mines but it is the agricultural resources, and we as an Association should do everything we possibly can to encourage the agriculturist and make it easier for him to reach his natural market. We must make farming more attractive, and if we do that we will build for ourselves a monument which will be left by us as a heritage for those who will follow. I thank you. (Applause).

The Chairman: I am sure you have been delighted with the splendid address we have heard from Mr. Squire. The best thing that can be said of the members of the Executive Committee is that they are serving the people who put them in office and if you want information of any kind from them they will be happy to give it to you. They are at your service.

I thank you for your attendance this morning, and I hope you will find the sessions throughout the three days that we will be here fruitful of much good, pleasure and enjoyment to you.

FIRST DAY

Afternoon Session.

THE CHAIRMAN: I have pleasure in introducing to you Mr. J. F. Beam, of Black Creek. He is not on the programme, but I am sure you will be pleased to hear his address.

ADDRESS.

"SOLVING THE GOOD ROADS PROBLEM," FROM THE FARMER'S VIEWPOINT.

J. F. BEAM, ESQ., BLACK CREEK.

Mr. Chairman and Gentlemen:

The saying quoted here from memory, will apply to the conditions of the present day as truly perhaps as it did not those of old when it was first uttered by an ancient sage, who said, "There are three things which make a people great, rich soil, just laws and easy communication." The last may be by convenient water ways or by smooth hard roadways. The first of these, rich soil, has been provided for us in fullest measure by a wise and bountiful Providence. The second, just laws, we are provided as yet with only a limited measure owing to our lack, thus far, of a real Moses as a lawgiver. When such a one appears the sinister power of the few who are now universally obstructing our progress will vanish.

Unjust laws have been secured by the few, such as exemption from taxation whereby the rich man pays little or nothing of the heavy tax for public improvements such as good roads, and this burden is therefore doubled up on the poor man beyond his ability to pay, and our natural growth and progress is greatly retarded. The great bulk of the wealth in this Province, which is mostly concentrated in the cities and in corporations, is escaping almost entirely its just share of the general public burden. This fact alone is the sole or fundamental reason why we are still so deplorably lacking in the third—easy communication—in other words, good roads.

Fifty to a hundred millions are needed to build, within the next twenty years, a connected Provincial system of hard, smooth, indestructable, concrete roads by expending from two to five millions yearly. It is simply impossible to bring about this great and costly achievement until we have a fuller measure of just laws.

The building of a proper system of hard roads will prove in the end to be the greatest and most useful of all our public works, because ten times the traffic will be carried over them daily and hourly, than is similarly carried over our railways and canals. Is not the finding of an equitable method by which the large sum required for this great work may be raised, the paramount part of the good roads problem? This granted, do not all the many other phases of this question appear as mere matters of detail, such as the best available material to be used, the construction of bridges and also that of the three different classes of ways to be built by the township, the county and the Province? Are not these details the work for expert civil engineers and experienced road builders to decide, and not for the layman?

Have we not been reversing the just order of things in devoting so much time all these years to the discussion of mere matters of detail, to the great neglect of the financial or fundamental part of the question?

There is no question more comprehensive or many-sided than that of good roads. With them, the welfare of every interest and individual is advanced; without them, the interests of the whole community is retarded. Hence every dollar in the commonwealth should contribute equitably to their cost.

The tax on the billions of corporate wealth chiefly concentrated in the cities of New York and Buffalo pays 95 per cent. of the $100,000,000 expended for good roads in the State of New York. The corporations will pay a similar share of the second hundred millions to be expended for the same purpose by that State.

In Ontario similar corporate wealth is almost scot free from such a tax. It seems we have as yet no David inside, or outside, our Legislature, brave enough to slay the selfish giant which is blocking our pathway to a larger prosperity. Once secure an enactment so that the enormous cost required for permanent ways is widely distributed on every interest and individual in the whole Commonwealth according to his ability to pay and each one's contribution will be thus made so light as to be easily borne. The difficulties that have so far hampered our hard roads movement will then all disappear as by magic. But nothing short of an all-round square deal in taxation will do it. In other words, a wide and just measure of Provincial co-operation is what is wanted to secure the greatest of all public works—good roads. This course will remove the great injustice which now puts the heavy end of the burden for hard main roads on the sparsely settled rural districts least able to bear it.

Farmers are fully justified in kicking strenuously against the gross injustice of inequality in taxation which is still a most objectionable feature of the present good roads scheme in Ontario. But everyone will readily submit to any just law giving equality in taxation of rich and poor alike.

If I may be permitted to make a recommendation, I would most respectfully suggest that this Association appoint not less than eight of its bravest men as a committee on laws to stay on the job until they have secured justice in taxation for hard roads. The Executive would, of course, form part of this committee, and they would act in consultation with the Highway Board. If they will prove as faithful to their trust as did the eight men who fought two years without ceasing until they secured the first million dollars State aid for hard roads, they will achieve a work of like importance. I am speaking from personal knowledge as one of the eight who at that time had to overcome much opposition in high places and also as the father of that first movement for State aid in Ontario.

The one-third Government aid is the lever that first started the good roads machinery moving, and brought about all that has since been accomplished to date in the various parts of the Province for hard roads. Justice in taxation and a larger share of State aid are now the two things most urgently needed to complete the scheme and extend the building of hard roads in every county and township in the Province. To accomplish this beneficial attainment is the work, object and aim of this Association as I understand it, is it not?

The writer was a delegate to the Municipal Railway Tax Association's first meeting held in the City Hall, Toronto, last October. I can only touch upon this question here. It was shown by the able speakers present that the 9,000 miles of railway in Ontario should pay $4,590,000 in taxes to be on a par with the city,

town, village and township average tax rate, yet the total tax paid by railways in 1912 was only $970,000, thus being $3,420,000 short in paying their just share of the public tax burden. Yet this is not the worst feature. Our laws favour the town at the expense of the township. Of this $970,000 railway tax, the 520 townships can collect but about $50,000 or at the rate of about five per mile on a half billion dollars' worth of railway property, as nearly the whole of the railway mileage lies in the townships. The cities and towns with but a fraction of the railway mileage, collect about $400,000 of this tax, and the Province steps in and takes the $500,000 balance, thus robbing the townships of their just share of this tax, but it does not dare rob the cities of their railway taxes.

The City of Toronto collects nearly $100,000 in taxes from railway property within her boundaries. It was an easy matter for Toronto to grant $100,000 for good roads in the adjoining County of York. Railway taxes for one year paid the bill, yet York County with double the value of railway property can collect but a paltry few thousand.

Injustice in taxation is one of the most potent reasons why the rural districts are being depopulated and the youth deserting the farms. The story of Abraham Lincoln's client may be applicable here. This client admitted to Lawyer Lincoln that he had stolen hams from his neighbor's smokehouse, yet the jury acquitted him. Lincoln asked for an explanation and the client told him that everyone of the jury had accepted some of the ham.

Why has our Legislative Jury so long exempted the railways from taxation, thus crippling the public service and causing the whole community to suffer? Is it because every member of this Jury has accepted a part of this public plunder in the form of free railway passes, and also, as it is said, in large subscriptions for campaign funds? It is said that "a gift blindeth the eye," and this is as true to-day as when it was first written ages ago. Is it not true that our method of taxing railways is a veritable public scandal? The poor railway employee is mulcted $12 to $16 in municipal taxation on his $1,000 house, while the railway Nabob and company pay but $2.00 per thousand on their property.

When the Banking Act was recently amended it was shown that the banks have on deposit upwards of a billion dollars of the people's money, on which they pay an average rate of only 2 per cent. They charge an average rate of 8 per cent., thus leaving a margin of 6 per cent. profit, amounting to sixty millions on the billion annually, which they are obtaining practically as a gift from the Canadian people. It can be shown that the net profits of the bank is nearer 20 per cent. than 10 per cent. The banks and railways could contribute $5,000,000 each year for hard roads and still have an ample margin of profit left. If such a tax were put on the farming industry, it would be crushed and the present high cost of living would ascend beyond the limit. Unwise legislation passed by town men for the most part, who fill our Legislative Halls, to boost the towns at the expense of the townships, has so drained the country districts of its population and wealth that of late years it has become almost impossible to secure farm help at any price, in competition with the high wages the bonused town industries are able to pay. This has broken the natural balance between producers and consumers, and caused the cost of living in towns to take a very noticeable leap upwards. This fact has taught the much needed lesson that you cannot pass one-sided laws without in due time also proving harmful to the whole mass of people.

The remedy may be found in applying the just principles of an income tax in Ontario as is the rule in the United States and other countries, whereby the rail-

ways, banks, mortgage corporations and the hundreds of other institutions with enormous incomes will replenish the public exchequer, and the wealth in our cities which does not contribute one cent will pay a large share of the cost of hard roads. Let the owners of "big business" and automobiles come forward with such a just and generous proposition and the strenuous opposition of the farmers to the hard roads scheme will at once subside. The farmers are going to be the greatest users of autos in the near future, with which they will do a great deal of direct trading by reaching out beyond the local markets into the larger business centres over the Provincial hard roads.

It took twenty years' effort to get the most important of all our tribunals, The Dominion Railway Board, appointed. It has taken also twenty years to get a Highway Commission, second only in rank to the former, appointed in Ontario. This new Commission has an arduous work before it. A Highway Board was appointed in the State of Massachusetts in 1892 which formulated a just measure that was adopted by the State Legislature in 1893. That Board has had full charge of the whole road problem there ever since and has managed the building of the best system of good roads to be found in America. If our new Highway Commission are as successful in forming as just a measure for adoption by our Legislature and will manage the construction of as permanent a system of hard roads in Ontario, they will prove to be true public benefactors.

THE CHAIRMAN: I have now pleasure in calling upon Mr. Camby Wismer, Treasurer of Lincoln County, to give an address on "Trunk Roads."

ADDRESS.

TRUNK ROADS.

CAMBY WISMER, ESQ., TREASURER OF LINCOLN COUNTY.

Mr. President and Gentlemen:

I listened with pleasure to the address of Mr. Beam and he has stolen some of my thunder. If we look into the Good Roads situation we find that even the Indians who inhabited this Province long before us had a preference for good roads. Our forefathers in the County of Lincoln pointed out to us certain roads that were at one time Indian trails and were afterwards made into county roads, and the same thing prevails in other parts of the Province. The Indians travelled along the lines of least resistance and these Indian trails were afterwards followed up by the stage roads, and although they have passed out of existence, the railway tracks have taken their place and the traffic still follows along lines which afford the least resistence. Railways are simply improved highways.

Coming down to the present day we find the automobile travelling up and down the roads of the Province nearly the whole season through, and we find the same necessity returning for trunk roads as we had when the stage coach was rolling up and down the highways of this country and formed the only means of transporting mails and merchandise as well as passengers from place to place. Conditions have changed and now our cities are larger and the rural sections are being depopulated. The increasing size of cities like Toronto and Hamilton and London and many other places has a tendency to draw young men and women to the city, and we find a necessity for trunk roads leading from one large city to another.

The automobile is here because it is here. They have become of such universal benefit to the community that we must dub them necessary evils, and we have to provide roads sufficiently hard and well-built to stand the wear and tear of these vehicles. I believe the time is coming when the farmers of the country will be using automobiles a great deal more than they do at the present time. I doubt very much if the time will ever come when they will be universally used the same as the horse, but they will be made use of by people who can afford to have them either for luxury or for business.

To show you the wear and tear to our roads that is caused by the automobile traffic, I would point out that twelve years ago we were expending a couple of hundred dollars a mile on our County Roads System, and at that time we had a road system which answered the purpose just as well as it does to-day for the ordinary farmer who hauls his produce into the City of St. Catharines or Hamilton by horse and wagon. Since the advent of the automobile we find the expenditure on our County Roads System increasing by leaps and bounds, and last year and the year before we had to spend the sum of $18,000 in maintenance. If we were making expenditures at the same rate as we did twelve years ago, we would not have expended more than about $6,000, so that you see $12,000 or two-thirds of the expenditure was caused by the automobile traffic.

When we commence to establish a trunk road system in the Province we find we are up against a very serious problem, because roads cannot be built without money. The farmer objects to being taxed, and I think rightly so, for the purpose of building roads that will stand a heavy automobile traffic. I believe a scheme can be adopted which will do away with the difficulty. If the wear and tear on the trunk roads was charged up to the cause no person would have any serious objection. It may seem an impossibility to raise funds in the way I am going to suggest but I think if the Government would impose a tax upon automobiles of $1.00 per horse-power—and I do not think that is exorbitant, and I would have to pay it myself because I own and operate an automobile—if this tax were imposed it would accumulate a vast sum of money. The average automobile is in the neighbourhood of 30 horse-power. That would mean that the average automobile user would be paying a tax of about $30 per year for the purpose of operating his machine on the public highways of this Province. Last year there were issued in the Province of Ontario about 18,000 licenses. In 1914 there will be probably 20,000 automobiles in the Province. That in itself would provide a fund of about $600,000 annually, and those of you who are accustomed to issuing debentures can easily see that if the Government would apply the fund accumulated by automobile licenses alone on trunk roads it would be able to make wonderful improvements in the interest of trunk roads in the Province without asking a cent from the townships, although I think it would be fair for the townships to pay towards the trunk roads the same amount as it would cost to maintain an ordinary macadam road.

I am informed that $15,000,000 could be expended in making trunk roads in this Province. I have often thought it is a great pity we have not as good roads in the Province of Ontario as they have in New York State. I am informed by the City Engineer of St. Catharines that a first class asphalt macadam road can be built for about $15,000 per mile, and that would permit of 1,000 miles being built with the fund I have referred to, and we can safely say that the maintenance of such a road would be taken care of by the increase in the automobile tax in the Province. I do not think you can say that I am hard on the automobile, because I believe, from the standpoint of the automobile owner, that he would save money

by being able to travel on a first-class road and could well afford to pay the tax. The saving of wear and tear on his machine would be a great deal more than the tax he woud have to pay, and he would not object to paying the tax if he knew he was going to have a first-class road to travel on. I believe the same characteristics exist at this time as existed years ago. We transport our produce along the lines of least resistance and the distance is measured by the ease with which the miles can be travelled and I do not believe any greater blessing can come to the Province of Ontario than through a system of good trunk roads.

Thanking you for the pleasure of addressing you, I will make way for the next speaker. (Applause.)

THE CHAIRMAN: The discussion on this subject will be lead by Mr. W. D. Flatt of Hamilton.

DISCUSSION.

W. D. FLATT, ESQ., HAMILTON.

Mr. Chairman and Gentlemen:

I listened with pleasure to the remarks made by Mr. Wismer and in so far as the maintenance of trunk roads is concerned I am thoroughly in accord with what he said. I believe the agencies that destroy a good deal of our roads should pay for their maintenance. I think if the Government started a system of trunk roads that the increase in the number of automobiles and motor trucks would be so large that a reasonable tax upon them would take care of the maintenance of every mile of trunk road in the Province.

The importance of good roads was forced upon my attention in the early days. My brother and I formed a partnership which lasted over 22 years and during 11 years of that partnership we made no money and had hard work to hold our own. All lines of business are profitable in some ways and in all lines of business there is a sink hole somewhere, and I found that the drawing problem in the lumber business simply took away whatever prospect we had of any profit. We had from 12 to 15 camps during the winter and employed over 2,000 men in Northern Michigan and had 150 to 200 teams. We finally started in to build trunk roads and we had from 20 to 25 miles of roads to look after at each camp and we demonstrated three things. We decided to build trunk roads and to construct ice roads and haul our logs over them instead of over snow roads. We had not gone very far until I thought we were going to " go broke " that year, with the expense of cutting the roads through these dense forests 16 feet wide for the road and 16 feet farther in order that we might plough the snow back, but after we had the roads constructed we found that whereas with the poor roads we were not able to average more than 1,500 feet per load, we averaged on the good roads better than 6,000 feet of logs to the load. We also demonstrated another fact, that we could increase our haul by four times. Up to the time we started to build ice roads we could not haul logs more than five miles, but with ice roads we could haul the logs 15 miles very profitably. Twenty-four miles was considered a good day's work for a team over the snow roads, but with the ice roads 32 miles was an ordinary day's work.

I was born and raised on a farm and the farmer's problem has always been my problem, and I do not believe there is a farmer who can afford to handle his produce over bad roads. I do not think the money that has been expended on our roads so far has been lost. I think it has been necessary and it has been an educational feature. If we had a system of trunk roads, branch roads could be

connected with these trunk roads and the farmer would be able to draw his produce to the consumer. If there is a gap that needs to be filled up, it is the gap between the producer and the consumer. I know of no two interests in this country that are so far apart. I have given this matter a great deal of thought. It was a matter of bread and butter to us when we were in the lumber business. The motor truck combined with good trunk roads holds the key to the situation and to the closing of the gap that exists between the producer and the consumer. By using a motor truck on a good trunk road, produce can be delivered for from 100 to 150 miles and it can be done profitably. We are close to Burlington and that is 28 miles from Toronto. I often go from Burlington to Hamilton and I notice that very often there are 30 or 40 teams standing at Burlington Junction; some have a dozen baskets of fruit, others have a load. I took the trouble to inquire into conditions and I found that the people who took their produce out there spent three or four hours a day in order to ship that produce, and I found that the stuff was hauled out and unloaded at Burlington on the platform and from the platform it was loaded into the express car and sent to Toronto. After arriving in Toronto it is loaded from the express car to an express truck and from the express truck to the commission man and then to the retail man. Eight handlings in 28 miles. I cannot call that freedom of communication. It costs 30 per cent. for shipping; that is to say, if you send $100 worth of produce from Burlington to Toronto you get back on the average about $70; the balance goes for the express, cartage and commission. The produce is still in the hands of the retailer and in the district where I live I find for that 28 miles between the producer and the consumer they are $40 apart on every $100 worth. That $40 goes somewhere and I maintain that with the motor truck and the trunk highway $10 or $15 of that could be put into the pockets of the producer. I claim they are not getting what they should for their produce and I also claim that $15 out of that $40 could be left in the pockets of the consumer. I often pick up a paper and I am struck with the fact that very few things are figured in thousands. It is millions and billions. Millions of dollars are being expended on our railways and millions of dollars upon our great waterways. These expenditures are all proper and right because this is a growing country and a virgin country and all these things have to be done, but very little attention has been paid to the highways of this country and when a few thousand dollars is asked for, it is not granted with very good grace. I believe that the agencies that wear out the roads should pay a portion of the tax. I own an automobile and I am satisfied that on my trips from Hamilton to Toronto it would pay me to pay a tax and have a good road. It sometimes costs me from $30 to $50 for one trip. If we had good trunk roads it would place thousands of people upon the soil and would increase the production of this country. I think the construction of these roads should be undertaken by the Provincial Government under the supervision of a commission and I believe the Government should pay 50 per cent. of the cost of the trunk roads, and the cities should pay liberally towards them when they are connected up with trunk roads.

I also think there should be a frontage tax. The land directly along the highway will receive an immediate benefit in an advance in price. I believe the municipalities through which these trunk highways run should pay something towards them but I do not believe a municipality should be asked to contribute if the road does not run through it.

Two years ago I was asked to become secretary of a committee that was being formed in the interest of promoting permanent highways between Toronto and

Hamilton. I never dreamed that it would involve such a large amount of work or I would not have undertaken it. We asked the Government to pay 50 per cent. of the cost of this highway between Toronto and Hamilton and the reply we got from the Honourable the Minister of Public Works, was that we must show him that we could pay the other 50 per cent. We interviewed the Council of the City of Toronto and we told them that we thought it would be fair to ask Toronto and Hamilton to pay a quarter of the expense. We found the road would cost $600,000. Toronto agreed to pay $125,000 and Hamilton $25,000, and we thought $150,000 should be provided by a frontage tax and that the Government should pay the balance. The most surprising thing in connection with the whole matter was the willingness with which the people along the road signed up for the frontage tax. They agreed to put up $100,000 towards the cost of the road; 96 per cent. of the people signed.

The argument that the people do not want good roads will not hold because in the face of the cost it was shown that the people realized the importance of a good highway. It is natural to suppose that Toronto, with 450,000 of population, at one end of the road and Hamilton with a population of 100,000 at the other end of the road and a population of 10,000 in between, that this road between Hamilton and Toronto would be the first link to be built of the trunk road system in this Province.

Mr. J. F. Beam: I want to take exception to the frontage tax. By placing on a frontage tax you make a man pay for one year while the road is being built, and that would be a great hardship on the farmers. A great deal better way would be for the assessor to assess the property along the improved highway at a higher rate because the farms would certainly double up in value by reason of having a good road in front of them.

The Chairman: I do not suppose Mr. Flatt proposes that the frontage tax should be paid in one year.

Mr. Flatt: Certainly not.

Mr. James Sheppard: I live in the same county as Mr. Wismer and I was superintendent of one of the roads there. I live 12 miles from the City of St. Catharines, and I can take any of you over the road I superintended and I can point out the very bad places in the road and give you the cause. The road is all subject to the same automobile traffic. American tourist cars, weighing two and three tons, travel over that road at the rate of 40 miles an hour, and where there is no other traffic the road is as good as it has ever been, but where it is subject to heavy wagon traffic as well as the automobile traffic the road goes to pieces at once. It is not right to blame the automobile for all the wear on the roads. I am an old hand on this Good Roads System; I was one of the first speakers sent out by the Farmers' Institutes to speak on good roads and I got a very cool reception. I have been introduced to an audience and they have turned their backs and begun to whisper to one another in order to let me know they did not take any interest in good roads. But what happened? The bicycle came and you know that the automobile never annoyed the farmer as much as the bicycle. He would sit on his fence and curse the man on the bicycle, but soon the farmer's sons and his relations and everybody else got riding the bicycle and the farmer became an advocate of good roads at once.

The same thing applies to the automobile, and I say that this question of taxing the automobile up to 30 horse-power is not right. Trunk roads are all right, but we must encourage the people to take an interest in other roads and we

cannot do it in any way better than by encouraging them to have light cars. A man may be behind a horse all his life and allow the horse to plunge through the mud, but just as soon as he gets out in an automobile he begins to find that he is the individual that is taking the trouble and not the horse, and immediately he becomes an advocate of good roads. I believe in the New York system of taxing the automobile because I think they have got it right. They put a small tax on the light cars and they tax the cars according to their weight. The light car does not do the damage. It is the heavy cars that do the damage and when they travel at a great speed they destroy the best macadam roads.

THE CHAIRMAN: I do not think anybody contends that the automobile does all the damage to the roads. I think it is conceded that every kind of vehicular traffic does more or less harm.

The next item on the programme is "County Roads," by John F. Vance, Waterdown, Wentworth County.

ADDRESS.

"COUNTY ROADS."

J. F. VANCE, ESQ., WATERDOWN.

In considering the subject we will confine our attention to the counties which have taken advantage of the Highway Act of 1901, and purchased many of the toll roads from private companies and constructed other main roads leading to the towns and cities. In a progressive province, such as ours, this was surely a step in the forward march and much good has resulted both to the rural and urban residents, the producer being enabled to transport his product to the consumer in larger quantities and better condition. There appears to be only one thing lacking in this arrangement of constructing roads, that is the injustice of requiring two-thirds of the enormous cost to be borne by the rural residents. After a thorough trial can we wonder at the rural municipalities protesting against bearing the bulk of the burden in a scheme which is of no less a benefit to the cities, and to which they contribute practically nothing? There being no direct Provincial taxation, the great wealth in the cities at present practically escapes paying anything directly towards the cost of good roads, also of the one-third now paid by the Province. The rural and urban municipalities all contribute indirectly their portions. The only way to make the cities and towns (separate from the counties) contribute their share of the cost is to amend the Statute so they will pay a direct tax to the adjoining County Road System. There is another reason why cities or towns (separate from the county) should pay a County Road tax for the building and maintenance of main highways, and that is because much more expensive roads are required to carry the traffic which must concentrate on the highway leading into a large centre.

Situated as we are in the County of Wentworth where six roads of the County system radiate from the City of Hamilton, the traffic must necessarily be very heavy and necessitate the construction of more costly roads than are called for in the more outlying districts of the system.

About the time the old districts were formed into counties, the Province then owned and maintained—spending on the building and maintenance (up to the year 1850) of the six roads leading into the City of Hamilton, now a part of our

County System, the sum of $740,885.00. With this enormous expenditure on the early road system it must be understood they were providing for vehicular traffic only, while the present County Road System must be maintained to withstand the automobile traffic as well, which has grown in our own locality to such proportions that it has ceased in many instances to become local. We feel that the Highway Commission appointed by the present Legislature has had thoroughly impressed on them the great advantage a Provincial trunk line would be to all concerned, and our suggestion would be that these trunk lines be built and maintained by the Province, charging a just proportion to the counties, cities and property holders whose lands would adjoin the said roads.

With the present day agitation of public ownership of public utilities would it be unreasonable to expect an equal subsidy for providing means of transportation as is guaranteed to railway companies, thus helping to finance the Provincial Trunk Road scheme? With such transportation provided, the producer and consumer will be brought into more direct contact, thereby saving the middleman's profit, thus helping to solve one of the vexing problems of the day, the high cost of living.

DISCUSSION.

J. J. Parsons, Esq., Jarvis.

Mr. Chairman and Gentlemen:

I presume that you have all had in your experience in the past something to do with the old fashioned barn-raising. First of all the farmer realizes the necessity of a barn. His next step is to prepare the material to erect the barn. After he has given due consideration to his requirements and prepared his plans and considered the material of every description that will be required to erect the barn, he has this placed on the ground. Then arrangements are made with some carpenter who understands the business of framing, and the timbers are cut and the bents and beams and braces and plates and rafters and every particular stick that is required to complete that building is properly prepared. Every mortise is properly cut, and the boss carpenter knows what the building will be like when it is complete. It takes some time to do all this but it does not take as long as it does to make good roads in this Province. Every piece of work in connection with the barn requires preparation and time and energy to complete it. The material is all finished and after the work has been properly laid out, every rafter cut with the proper bevel, and every tenon and every mortise, the day of the raising comes. The work of putting up a barn ready for the sheeting as a usual thing is a short job, perhaps lasting a couple of hours. When the material is all ready, the farmer notifies his neighbours of the intended raising, and as it is a nice day when things go right and smoothly and there are no accidents, the neighbours turn out for the raising. As a usual thing two captains are chosen and they pick their men, taking those who can climb posts and who can stand on the beams without getting dizzy, and so on until the entire body of men have been allotted to their particular posts. Then the critical time comes of raising the bents and a great deal of the success of the raising depends upon the boss carpenter and the way he "yee-haws." You all know as well as I do the incentive that word gives to the men who are lifting.

We have met year after year in convention and this is the Twelfth Annual

Convention of the Association, and we all feel the need of good roads in the Province of Ontario just as the farmer feels the need of a barn, and just as the farmer prepares everything for the raising so this Association has been preparing for the work of road-building. When we were first informed on this question through the Farmers' Institute speakers who went out to point out the necessity for better roads, the people set about to obtain a grant from the Provincial Government and a sum was set aside to assist counties in this work. All these things led up to the work we are engaged in at the present time—the work of building good roads—a matter of education first, then preparing the people so that they would see the need of good roads, and we feel a great need to-day of improving our county roads. I have no quarrel with the previous speakers in regard to the trunk roads, but I would like to call your attention to a retrospect of this matter for a few years.

The question of the automobile is a peculiar one. When the Act under which we are at present working was framed, what we called the County Good Roads System, the automobile traffic was very light and was not taken into consideration by the people who first engaged in the building of county roads. The County of Wentworth was one of the earliest to enter upon this work and they did not take this large automobile traffic into consideration, but the automobile is here to stay and it would be a pleasant thing if we were all owners of automobiles and had the necessary money to indulge in that luxury and had beautiful roads to drive over. I hope the time will come when we will all have an automobile. But when these county roads were first constructed they were not constructed for automobile traffic, but to get from the farms to the nearest market towns with greater ease, and for the purpose of making it easier to haul produce from the farm to the market and from the railway station to the farm. You all know that a farmer very seldom drives very far from his market town.

It was the original idea of the Government to assist in building short roads from the farms to the markets, but things have gone on from year to year and now the automobile has come and they are urging for Provincial roads. I have nothing to say against that but I think first of all we require to complete the roads that were originally intended to be built by those who framed the Act, and when we have that system of roads finished it will be time enough to go on to the greater scheme of building trunk roads. I claim that is a reasonable view to take of this matter because before the automobile came, the roads as they were originally built answered the purpose.

The statute labour system has been in force in this Province for a great many years, and we have come from the original corduroy road covered with dirt until to-day we have a graded road put in very fair shape and which answers the needs of the farmer for the greater portion of the year. My part of the country is clay, and when we have good roads we have the best of roads, but we were not satisfied with the roads even when they were at their best, and we who listened to the lecturers who were sent out to tell us of the benefits of the macadam roads believed those men knew what they were talking about when they told us these roads could be built at an average cost of about $2,200 per mile. I believe that some of these speakers when they were telling throughout the Province how these roads could be built for $2,200 a mile did not know any more about it than an unborn babe, and with all due respect to them, I say their estimate of the cost fell far short of the actual cost, and sometimes when a man thinks he can build a barn for $2,000 he has to multiply that sum by two before he has the barn completed. However,

I considered that these men who came out to tell us about the macadam roads knew what they were talking about. The County Council passed by-laws and entered upon the work and our experience is that they cost nearly $5,000 a mile, and we have come to the point where we have raised all the money we are permitted to raise and we have not our roads completed, and after the experience we have had it would be difficult to get some of the County Councillors to touch the Good Roads System with a ten foot pole. You must understand that I am not saying anything against it; it is a good thing and we need good roads just as much as a farmer needs a good barn, but we are getting these good roads at too much expense and too much loss of time. We have had educative meetings such as this, year after year instructing us as to how to make good roads and the Government has come to our assistance, but I believe I express the opinion of every County Councillor in the Province of Ontario when I say we require more assistance than we are getting and the time has come when it is necessary for the Government to come to our aid with more money.

This fact has been pointed out to the Commission that has been holding sittings in different parts of the Province. I had the pleasure of attending a number of these sittings and the Commissioners have asked the County Councillors to freely express their views on this question. This Commission is a good one and I believe they have obtained a great deal of valuable information and that they will use this information and put it into their report, and I am looking for great results from their report. We find that maintenance is a big factor in connection with our County Road System. The great trouble is not the first construction but the upkeep. I do not blame the automobile altogether, because I think the heavily-loaded vehicle with iron-bound wheels passing over macadam roads crushes the roadbed to a certain extent, and then the automobile comes along at a great speed and the suction from the tires loosens the material and it is disintegrated. But where the automobile travels on a concrete road as they do in Wayne County, Michigan, that does not occur. We cannot afford to build county roads at an expense of $16,000 per mile. We have been learning a little year by year, but I think the time has now come when we know how to build roads and we have good engineers and superintendents. The question before us to-day is not of education but of more assistance.

I am glad to see that a number of farmers are getting automobiles and I hope to have one one day myself, but I do not propose to drive it at the rate of for that road. I do not know of any county that received a second grant for any rate of 60 miles an hour and I was glad when I got out. That is too fast for me. I have a pretty good driving horse and when he is travelling at the rate of eight or nine miles an hour I think I am spreading the wind, but when you come to multiply that speed by five or six that is too much speed altogether. I believe the fast driven automobile is the cause of most of the trouble to our roads. If they would travel at the regulation speed, they would do very little damage and I do not see why they should go at such excessive speed; they cannot see the country nor enjoy the drive. While I think it would be nice to have these concrete roads, yet I think a road that will satisfy our needs in the Province, outside of some of the main thoroughfares, is a good waterbound macadam that can be constructed for $6,000 a mile. If we get increased assistance from the Government of not less than 50 per cent. of the cost and if the automobiles are assessed so much per horse power—I do not say that it should be $1.00, but say 40c. per horse power—and that money applied to the maintenance of these roads, I think we would be able to manage fairly well.

I did not intend speaking at any great length but I feel the time has come when we do not want any more education or meetings of this nature for the purpose of considering the necessity for good roads, but now we are ready for the barn-raising and we want it raised quickly and we want the money right away. (Applause.)

Mr. E. A. James, County Engineer of York: Mr. President and Gentlemen: Looking over the programme I find that there are three topics of discussion outlined for the first two days—trunk roads, county roads and township roads. I think it is unfortunate that the subject has been so divided. It makes it appear as if there were three sets of roads. My own feeling is that the farmers of Ontario are interested in good roads and not interested in any special type. In York County we find that such a sub-division is almost impossible. A road that might have been considered a township road three years ago, and that did not carry more than 25 motors per day, has in those three years developed into a trunk road carrying from 150 to 200 motors per hour, and for that reason I fancy that considering our road problem we must consider good roads without classifying them into trunk roads or township roads.

The great difficulty we meet with is to design a road that will cope with the through requirements, and of financing this type of road properly. After we have spent $6,000 or $7,000 per mile, we find the traffic conditions have changed entirely and that it would have been much better if we had spent twice that amount of money. The question then comes, how are we going to finance the roads the second time? The Government has so far said that it could not make a second grant for that road. I do not know of any county that received a second grant for any one mile of road. The difficulty is to design a road that will meet the present conditions and future requirements, and after all the question comes back to one of finance. The County Roads System has been developed during the past few years and has given excellent results and it has been brought out in discussion to-day that some new method of administration must come. My contribution to the discussion this afternoon would be that we cannot divide the road question into different types of road but we must find a method of financing the building of roads to meet the requirements.

Chares Talbot, County Engineer, Middlesex: In reference to the trunk road that has been spoken of leading from Toronto to Hamilton and Buffalo, capable of carrying heavy automobile traffic, nobody will doubt that such a road must be built with a solid concrete base. I do not think anything else will satisfy the requirements, but it would be a most unfortunate thing, in my opinion, if such a road were saddled on the other part of the Province. I come from the western part of the peninsula, London being the centre, and we have not such intensive road conditions there as you have here. Good waterbound gravel roads are built at a cost of from $3,000 to $4,000 per mile because gravel is very easy to be had and they will answer our purpose and will make a perfect road that will last from three to four years. I think it would be a calamity to rip up such a road and put in a concrete base because it is not required and is not justifiable. I do not think the western part of the Province should be saddled with the expenses of a concrete road from Toronto to Niagara Falls. (Applause.)

D. H. Moyer, Lincoln: I scarcely agree with the County Engineer of York in saying that we should not classify these roads. These township roads are roads for which the municipal councils are responsible, and we feel now that there are

certain trunk roads for which the Provincial Government should be responsible. We have three classes of road and we must deal with them. Mr. Parsons referred to a barn-raising. I am from a rural section and I do not own an automobile, but I think the narrow-tired vehicles and the automobiles are responsible for the destruction of the roads and I do not see why we should severely tax the horseless carriage and let the narrow-tired waggon go free. I think the responsibility should fall on both. I do not think we should tax the towns and villages because some of them are carrying too heavy a load now.

We are led to believe that the Provincial finances are in a splendid condition, and I think the Provincial Government should act generously towards road building. I think the Government did their part when this Act was first brought into force and I think they are going to continue to do their part. They have appointed a Highway Commission and that is a pretty good indication that they want information. It is up to the State of New York to keep up their trunk roads and I think it is up to the Provincial Government to keep up the trunk roads in this Province.

Mr. James: Mr. Wismer tells us that some years ago the maintenance charge in Lincoln County was $200 per mile and he gave us the total charge at the present time. Can he give us the charge per mile?

Mr. Wismer: About $600 per mile. I think a Provincial system of highways right from Ottawa to Toronto and all over the Province would be a grand thing.

Mr. H. D. Cleminson: Mr. Chairman: To my mind the most destructive vehicle on the road is the narrow-tired wagon that the farmer uses. The felloe on the wheel may be 2½ inches, but after a couple of years it gets much narrower and that ruts up the road, and then the automobile comes along and scatters the dirt. One thing we want is efficiency and economical administration of our roads. We waste a lot of money on our county road system and get no value for it. We talk about the Provincial Government taking control of the county roads and we talk about the Provincial Government taking the road administration out of politics. We should take road administration in our own counties out of municipal politics; that is one of the greatest curses of our road system. We build roads for the purpose of having some man elected. In one county, near the county from which I come, the reeve of the municipality decided upon where the road should be built and they have no connected system of roads. I think we should have a business-like administration of our roads and not a political administration and I think the Government should give us more efficient inspection of our road system. The system of inspection to-day is a farce. What does the inspector who comes from Toronto after a road is constructed know about it? He goes over it in an automobile travelling at 30 or 40 miles an hour. How can he tell whether it has been properly constructed or not? We must ask the Government not only to give us more money but to give Mr. McLean more money so that he can have a more efficient inspection of our roads. Our roads should be built as standard roads and not in such a patchwork way as they are at present. In the County of Prince Edward we have one system and in Hastings they have another. I believe in trunk roads, and I do not believe we should tax automobiles out of sight.

Mr. Beam: In Massachusetts they appointed a Commission to take charge of the road system. We have been going on loose ends and we have had no head. It has been all tail.

The last speaker is right; we should have more system and do the work in a proper way. If we have proper inspectors they will see that no poor stone is put on the roads. Our roads are costing us too much at the present time.

Mr. Cleminson: Mr. Parsons said there was no necessity of education. The farmer lacks education on road building and he should have it. The County of Prince Edward at the last meeting took the administration of the roads entirely out of municipal politics and we now have a permanent road commission, consisting of a chairman and the County Road Superintendent and one representative elected annually by the County Council.

Mr. J. J. Parsons: I did not mean that we did not require education as to the building of roads, but I think the people all over the Province have been educated to the point that they know good roads are beneficial.

Mr. W. E. Tummon, Hastings: I would like to say that in our county the question of municipal politics does not enter into our county road system. The county road system of Hastings has been in operation for 50 or 60 years, and during that time we have had a county road superintendent.. The position is permanent, and our present county road superintendent has held office for the past ten years and all questions in connection with the county road system are in the hands of our superintendent. The Chairman of Roads and Bridges one year is a Conservative and the next year a Liberal. (Laughter.)

It is not long time since we had toll roads in our county. These roads had to be built to meet the needs of transportation. As time went on, the roads were taken over by the county and now they are nearly all abolished. The same argument can be used to-day in connection with the automobile; they are an invention to a certain extent and we stand in need of better roads, and the automobile owners should not object to paying a reasonable tax.

The first road that needs the attention of the Provincial or Dominion Government is the road that leads from the farmer to his market town and that is the first road that should be looked after. It is all right to talk about trunk roads but we should not centre our minds too much upon them.

Mr. Wismer: I think what we are all united upon is better roads. Bad roads constitute the break between the consumer and the producer, and it must be bridged over so that these people can be brought together. The farmer who resides upon a trunk road is fortunate because he has better shipping facilities. He is also fortunate if he resides upon a branch line that leads to a trunk road. When the rural telephone system was first brought into force we thought it was a wonderful thing but it developed simply into a place for the ladies to gossip and it took up too much of the time listening over the 'phone. The rural telephone system only becomes valuable when it is connected with a trunk line and it will be the same with our road system. We must have trunk lines to which we can connect up the branches.

Mr. Cleminson: I do not think there is any objection on the part of any person to trunk roads if the Government wants to build them. We have no objection to the Government building provincial roads but we do not want it to take any money from us for the purpose of building them. We want to use our money to build roads to our market towns.

Mr. Tummon: If the Government gives money towards roads it will want to know where that money is being spent and whether it is going to do any good. It sent out the Highway Commission to get the views of the people. I think when we are asking the Government for money we should show it what we want. I do not think the county councils memorialize the Government sufficiently often by telling it what they do want. I think it is our duty to give the Government any

information we can, and that can be done best by resolutions of the county councils. One county may want one thing and another country another.

The trunk road in the eastern part of Ontario woud run east and west. The County of Lennox is a very narrow county east and west, but it is very long north and south—120 miles— and a trunk road crossing that narrow county would not be in the best interest of the greatest number of people in the county. I think we should deal with the Government in a co-operative way and I would recommend that every county council should pass resolutions and let the Government know what it needs.

MR. MOYER: We want assistance in the maintenance of the trunk road from Queenston to Toronto so that we can put the money that we now have to expend on this road into our township roads. A provincial road like this should be kept up by the province.

THE CHAIRMAN: There is no doubt that the Highway Commission will be able to evolve some system that will be fair to the farmers of this country.

Moved by Mr. McKay and seconded by Mr. Major, that the Municipal Act and the Highway Improvement Act should be amended so that moneys raised by debentures for highway improvement purposes, and the money received from the Provincial Treasurer on account of expenditure under the Highway Improvement Act should form a special fund to provide for expenditures under said Act only. (Sent to Committee on Resolutions.)

SECOND DAY

Tuesday, February 25th, 1914

Morning Session.

The President occupied the Chair.

THE CHAIRMAN: Before beginning our regular programme, I will ask Professor Laing of Toronto University to address you.

ADDRESS.

PROFESSOR LAING, UNIVERSITY OF TORONTO.

Mr. Chairman and Gentlemen:

I am delighted to have a chance to say a word or two to you on matters relating to the improvement of our highway system. I listened yesterday afternoon with considerable interest to the discussion that followed the last paper and was interested in the remarks made by one of the speakers regarding the advisability of utilizing the service of trained men for work of that kind.

It is quite evident that the situation that confronts us in the Province is one that needs to be grappled with on a broad and substantial basis. It seems to me from what I have been able to gather from my own experience—because I was born and brought up on a farm and did my share of statute labour—that things are not the same as they were in the early days and that now we want some systematic handling of the whole Provincial system.

I am not here to make a plea for the employment of university men but we are interested at the university in training men to do service that will be valuable in this work of road-building. I think it is perfectly clear to us that this question must be grappled with on a scientific basis and it will require men scientifically trained for the purpose. The advances that have been made both in Europe and in England and the United States have been under the direction of highly trained engineers. This is not in any way a reflection upon well-trained men who are undertaking road work throughout the Province. We do not intend to discount their services in the slightest, but I believe you will agree with me that there are a number of instances where they would be better able to handle the situation if they had the training that is now available at our University. It would seem that the encouragement of men of this type is somewhat beyond the financial power of different municipalities. There is no reason why services of this kind should not be made to tell to the limit and I believe it would save a good deal of money. An engineer would probably have to deal with drainage problems and there would be ample work in any well-organized community to warrent the employment of men who have been properly educated for the work.

In conjunction with the work of the road men, the action of the Provincial Board of Health seems to indicate that it is going to insist upon competent men for handling the sanitary situation. The Board of Health seems inclined to enforce regulations with regard to sewage and the prevention of the pollution of streams, and these questions have to be grappled with in the same way as our highway system.

Speaking briefly of what we are attempting to do in the University in the final year of our Civil Engineering course, we have sought to develop, after the men have had a thorough training in the elementary principles of science, what we call a Municipal Engineer's course. In addition to the regular subjects dealing with the strength of materials and hydraulics and steam engine work, we have arranged the final year's work so that the men may select options dealing with sanitary problems and highway engineering. We are giving a lecture course dealing with the principles of construction and with matters of administration, maintenance and reports, and the investigation of materials that are used. It is one of the chief functions of an engineer to go into the problem and size up the situation and, with the information he is able to gather, devise means of obtaining the best results out of the materials at hand. It is just as essential in the construction and putting in proper condition of our highways as it is for an engineer employed on a railway.

We have a splendid class and the work is being taken hold of better than we expected. You have no doubt come in contact with a number of them already. Mr. James is one of our graduates and there are a number of our graduates employed throughout the Province. I think you will find the University always willing and anxious to co-operate with you in the investigation of materials that you have to use; for example, gravels. There is nothing standardized as to how to handle gravel, but a great deal of work is possible and the results to be obtained are enormous. It is necessary to make proper selections of the gravel deposits in a great many sections of the Province, and this work is of great importance. I assure you we will do our best to help. We are anxious to help you and I hope you will avail yourselves of the services of the men we are training. (Applause.)

ADDRESS

"TOWNSHIP ROADS."

CHARLES BUSH, ESQ., ST. CATHARINES.

Mr. Chairman and Gentlemen:

I am proud to be here to-day as an humble representative of a progressive township. The question we have at heart is a serious one, and one that inspires enthusiasm—a question that is not confined to any one section of the community and to any class or condition of the people, but applies to everyone and has to do with the welfare of the whole Province. In this twentieth century we cannot do with any make-shift. Some of us have heard people say that things that were good enough for their fathers are good enough for them.

At a recent election, I happened to be identified with the development of the Hydro-Electric System through the rural municipality and I was told it was no business of mine and I had no right to thrust upon the people any further taxation because they were perfectly content with what they had. But I am glad to tell you that electricity will soon be available and it will spread like wild-fire throughout the length and breadth of this Province. I am glad to tell you that the Hon. Adam Beck announced last night that not only will electric light be available throughout many rural municipalities but that the telephone system will soon be tackled by the Government and that it will work in combination with the Hydro-Electric System.

I introduce these subjects to show you the progress that is being made in the Province of Ontario. The rural population has been decreasing somewhat owing to the great development of the towns and cities, where men have been able to secure employment at good wages, and this good roads movement is going to help the situation considerably. We are missionaries with a definite mission and that mission is an educational one. We have been told that we did not need to learn anything more about the construction of roads and that there are experts that are available, and we are delighted to have Professor Laing tell us that we can have the services of the graduates of the University of Toronto, but, sir, there is other educational work to be done. There is the work of convincing every individual farmer that he must not look only to his own selfish interest and to the development of his own property, but that he should see his responsibility in helping to develop the whole Province.

I came here fourteen years ago from a country of good roads and for some time I was discontented with the mud that I had to plough through to reach centres of civilization. I waited in vain for some movement to abolish the statute labour system which struck me as being primarily responsible for the condition of the roads. We have heard a great deal about trunk roads and county roads and we have been told that township roads should not be put in a class by themselves; I am perfectly in accord with that statement. Township roads are the primary roads. It seems to me that they are the primary roads because they are the heart of the problem. The roads that run through the township present the greatest difficulties and perplexities because of the limited amount of money available. I think we should realize the necessity of co-operation between those who are advocating the extension of the county road system and those who are advocating the extension of the trunk roads, and those who are advocating the increase of permanent road work throughout the townships. The township councils have a very limited power. If an increase of tax is made in any one year, the council that starts out to do that is wiped out of existence at the next election; therefore, we have to go slowly. It is a hopeful sign that in some townships they already have a system of macadam roads. At the present time we are receiving no direct assistance from the Government, but I think we will receive some encouragement through the report of the Highway Commission. It is generally recognized at the present time that the ratepayers in the townships are being imposed upon in having to raise all the money necessary to build a system of solid roads. The county roads have done good service and have been a great educational factor in the development of this movement, but they have benefited only a small number of the people in the townships. In my own particular township, not more than a quarter of the people ever have any occasion to use the Queenston and Grimsby stone road and there is no doubt that the county road system is deficient in that respect. All these things have been brought before the Highway Commission and I want to take this opportunity of saying on behalf of Lincoln County that we have every confidence in the Commission. We are satisfied that they are doing their work thoroughly and that they are desirous of going minutely into all the details and all the difficulties of the problems that effect the road system of this Province. They have been given a free hand by the Government, and they have been instructed to find out what the people want and what proportion the people are willing to pay.

Mr. Beck told us last night that the Government depended largely upon such associations as the Board of Trade and this Association for guidance in their deliberations and for advice and help in regard to new legislation. Therefore, I

think we should not let this convention close without a clear statement of the findings of this convention as to the best method of procedure in connection with this important road movement.

One of the questions that we have to consider is the abolition of statute labour where it has not already been abolished. I do not think there is a man here to-day who would advocate the continuation of the statute labour system, and I think the Government would be justified in abolishing the statute labour system. In my own township after three years fight single-handed, it was finally abolished completely and the roads were placed under a proper organization, but unfortunately the people who helped me carry that by-law were cut off by the people who were opposed to passing it, and the effect was that the council that is in office to-day is not in sympathy with the new system but they dare not repeal the by-law, and pressure will have to be brought to bear in order to see that a new and proper organization is established and carried out.

That brings me to the question of the liability of the ratepayers individually. Some people say it is no business of theirs how the work of the municipality is carried on. I think you will agree with me that that is not an intelligent position for any man to take. If the members of the council have access to the wishes of the ratepayers from time to time, their hands will be strengthened. If there is work to be done, the council sometimes hesitates to tackle it, but if it had the backing of the people it would go right ahead. The ratepayers do not object to paying taxes if they get value for the money, and often a road has to be built before the people understand the value of it.

There is another way by which we can get roads built, but which unfortunately at the present time is not available. I believe legislation will soon be enacted in order to make it possible, that is, under the Local Improvement Act; and I think much good work can be done by such a system. The provisions of this Act do not apply to townships, and there is no reason why they should not. We were told yesterday that work of this kind was unfair to the people who had to pay the cost. No taxation is unfair if the man is willing to pay the price. Under the Local Improvement Act it is practically local option, and you will find that 90 per cent. of the people want these improvements. I do not think there would be any unfairness imposed if the work was properly apportioned. I hope this Association will recommend amendments to the Local Improvement Act and extend the benefits of section 9 to the townships. The tax payers whose property will be immediately benefited should pay 25 per cent of the cost of construction, the township a quarter, the county a quarter and the Provincial Department of Public Works a quarter—the Department's contribution not to exceed $1,000 in any one year to any one township, and the work to be done under the supervision of the Provincial Engineer's Department and in accordance with the standard specifications, the same as county roads.

I thank you, gentlemen, for your kind attention. (Applause.)

DISCUSSION.

J. W. McLeod, Esq., Cornwall.

Mr. Chairman and Gentlemen:

I came here to learn and I hope you will forgive any rambling remarks that I may make. I do not know how I come to be put on the programme unless it is

because Mr. McLean, the Provincial Engineer, happened to be in the east and saw something of what our township was trying to do in the matter of building roads. I am heartily in accord with most that has been said by the last speaker, especially what he said as to the township roads being the primary roads of the Province of Ontario. We have only to look at some of the literature sent out by the Provincial Engineer to see that the township roads represent 83 per cent. of the roads of the Province and I think 83 per cent. of the roads of the Province should receive a good deal of consideration. We have no help in building these roads and we have to tax the people for the purpose of building them.

I believe Professor Laing is right in saying that we must have trained men and I think it would be a good thing if they would send out their instructors, but I think the question of road-building is more a matter of dollars and cents than of trained men. In the eastern section where I come from, we have a very heavy drainage tax and some of the people are driven away from their farms by the taxes they have to pay.

Unfortunately our county did not take up the County System and we have no county roads; I think it was a little jealousy on the part of some of the townships thinking they would not get their just proportion of the grant. It is an uphill fight getting the people to spend money on the roads. The township that I represent bought machinery for the purpose of road-building, and that is the first thing that should be done because you cannot build good roads without road machinery.

A good deal has been said in reference to the split-log drag. I think probably too much has been said about it because some townships think when they have a split-log drag that that is all the machinery they require, but that is not the main equipment for building good roads. What you want is something that will help you to put stone on the road. I am not saying that gravel is not good for township roads, because it is. The split-log drag does good work on clay roads and smooths them down, but they will be the same 20 years from now as they are to-day unless you put gravel and stone on them.

Under the statute labor system our roads are going back instead of getting better, but it is hard to deprive the people of something that they have become accustomed to. I was elected on the understanding that I was to get road machinery for the township, and there were two other members in the Council in the same position, and we purchased what I considered to be a very good outfit. It was bought in 1907 and it is working yet; but the very next year after it was purchased I was kicked out, and I told them that the time would come when they would ask me to come back into the Council, and the next year I was re-elected without opposition and I have been at the head of affairs ever since. When the people saw what was being done with that road machinery they knew I was doing what was right, and they demanded another road-building outfit in that same township because one outfit would not cover enough ground.

A Member: Of what does your outfit consist?

Mr. McLeod: A roller and crusher, bins, screens, delivery wagons, sprinkling wagons and grader, and all that is necessary for road building.

Q.—What is your road mileage?

A.—160 miles.

Q.—What did your outfit cost you?

A.—About $4,000. You cannot buy the same outfit to-day for the same money.

Q.—Are you building macadam roads in your township?

A.—We are building macadam roads. In one part of the township we have gravel and we do not put macadam roads where we have gravel. We have abandoned the statute labour system.

Q.—What are the gravel and macadam roads costing you?

A.—You must understand that we are not building what the Government Engineers would call a complete road. We cannot afford to do that. Our idea was to start in and build trunk lines first. We had certain roads leading to Cornwall, our market town, and we started building these, or improving them I should say, and we have now completed about 45 miles of good passable macadam roads and these roads cost us from $500 to $600 per mile. The drainage was very good before we started and we have an abundance of stone down there. We have some places where there is nothing. We clear away obstructions on the highway that used to cause the snow to drift in and block the highway in the winter time, and the farmers give us these stone walls and we take them away and crush them and that helps to reduce the cost of the roads considerably.

Q.—How wide are you making your roads?

A.—When we come close to the Town of Cornwall we widen the road out and put on more metal, but where the traffic is not so heavy we make them narrow. We always give a track and in some places a double track.

Under the statute labour system we had 69 different divisions and 69 different styles of road construction. I do not think the roads were improved by statute labour. It was simply taking the mud out of the ditch and putting it on the road. There were about 6,000 days work in the township and we were getting no returns for it, and I proposed that they should put that into the general rate and figure it at 75c. a day which would amount to $4,500, and the $4,000 we are getting in that way is accomplishing more in one year than it did in ten before. (Applause.) I would like to see the Government take the statute labour business out of the hands of the township and abolish it altogether. (Applause.) No man could be elected in our township now who would want to go back to the statute labour system.

Q.—Do you build and maintain these 45 miles of road with the $4,500 a year?

A.—No.

Q.—How do you finance the scheme?

A.—From the yearly taxes each year. We do not issue any debentures. I am personally in favor of raising debentures, but we have not educated the people up to that yet.

Q.—Have you found that the maintenance costs you very much?

A.—No, it does not. We have followed up the maintenance pretty closely. We leave in different places along the highway enough metal to repair the roads. When we crush stone in a certain place we leave a certain quantity there for the purpose of repairs. Don't let your roads get too far out of repair before you start with your maintenance and you will have very little trouble.

Q.—Can you give us the cost of maintenance?

A.—No, I could not.

Q.—What is your general rate?

A.—16 mills on a low assessment.

Q.—What is the percentage of the actual value that you assess at?

A.—I think probably one-third of the actual value. We have a reason for that. We have a great many fixed assessments in our township. We have more

mills and other industries that have fixed assessments. Our general farm property is assessed at about one-third; if we raised the rate we would get very little on these fixed assessments.

Q.—What is your county equalization?

A.—$38.00 per acre.

Q.—Does the 16 mills include school rates?

A.—No, that is the municipal rate and does not include school rates.

Q.—How many miles of road do you build in a year?

A.—As a general thing we construct three or four miles. Every farmer has to travel on the township roads, and although I do not find any fault with trunk road systems—and in fact I hope we will have quite a few of them in this good old Province of Ontario before long—they will be of more benefit to the tourists, and the farmers who should be first looked after will be helped most by aiding the township roads. If we have good roads in the country it will be an inducement to keep the young men on the farm. I noticed a statement was made in last night's paper that there are 100,000 less population in the rural sections than there were forty years ago, and I think there must be something wrong in this Province when such a thing as that occurs. We are now getting power and light in the country and we should have good roads. I think that will be a great inducement towards keeping the young men on the farm.

Mr. Beam: No Government will ever abolish statute labour. In New York State they give a certain amount to the townships that abolish statute labour; if the Government would give the townships that abolish it so much, I think it would have a beneficial effect.

Mr. McLeod: The State of Massachusetts gives so much per mile according to the thickness of the metal that is put on the roads. I think we should make some recommendation to the Government as to what they should pay the townships.

The Chairman: I am glad to see such great interest is being taken in this question. It is of first importance, because the township roads are from 80 to 85 per cent. of the total roads of the Province.

Mr. Chas. Ketcheson, Reeve of Sidney: Mr. President and Gentlemen: We have a good deal of reason to congratulate ourselves in the County of Hastings on our roads. We have plenty of gravel and material for the purpose of road-making. We found it absolutely necessary to create the county road system. The County of Hastings is about 140 miles long, and years ago when there was no railway connection except the Grand Trunk; everything had to be hauled to the front. The County of Northumberland used to use the roads in the County of Hastings in hauling its produce to Trenton. We have about 607 miles of county roads. Since the railways have developed, the county has been cut across by enormous railways and that has facilitated shipment, and the county road system is not now of such great importance.

We have a road superintendent who is responsible for the work, which is divided into divisions. Each councilman has a division; he inspects the roads in his division with the superintendent, and the superintendent carries out the work. Owing to the scarcity of labour it is impossible for the superintendent to do all the work that is required, but he does the next best thing, and we are now putting on gravel in the winter, when it is impossible to put it on in the summer. We have a systematic way of looking after our roads.

Q.—What kind of culverts are you building?

A.—Concrete. We have a good deal of hilly country, and there are plenty of cobble stones and flat stones; they were used in the early days for building culverts, but they did not stand up very well. In Prince Edward County their culverts were built of flat stones with a concrete top. We did not have sufficient flat stone for that. We conceived the idea of an arch and made little forms out of heavy galvanized iron and built our culverts in that way, and we have never had one out of the 400 we have constructed, go down. We have a number of sand hills running across the township and the freshets wash the sand out, and sometimes the culverts are washed out in that way, but since we have been building them in the way I have described, we have had no trouble.

A Member: What do these culverts cost?

Mr. Ketcheson: A 20 inch culvert could be built for from $14 to $18. A good deal depends on the number you build in the near vicinity. If you have two or three culverts convenient to one another you can build them for $8 apiece.

Q.—What length would they be?

A.—From 16 to 18 feet. We have built three foot culverts at an average price of $36.

Q.—How much do the five foot culverts cost?

A.—From $50 to $75.

Q.—They do not cost $100?

A.—No, we have never had any cost $100.

Q.—Do you build them by the yard or in what way?

A.—By days' work. Our superintendent works on the job and we pay him $3.00 a day. Formerly we paid him $2.50, but this year we are paying him $3.00.

Q.—In what percentage do you mix the concrete?

A.—One in seven: sometimes a little more cement.

Q.—How do you employ the township superintendent?

A.—By the day; he costs us from $300 to $400 a year.

Q.—Do you allow him to hire the men?

A.—Yes, the Council sets the wages that are to be paid the men and teams in laying on gravel, and the superintendent hires all the farmers he can. We do not pretend that our system is beyond criticism or that it is perfect, but we do contend that it is 100 per cent. better than the old statute labour system.

Q.—Do the members of the Council interfere with the road superintendent?

A.—We make him responsible to the Council.

Q.—Do you use old stone for fillers?

A.—Yes.

Q.—Did you ever have any experience in putting gravel on the roads in winter before?

A.—Yes.

Q.—How does it work out?

A.—All right.

Q.—Do you put it on the snow?

A.—No, but this winter on some side roads we are putting some on the snow.

Q.—Right in the middle of the highway?

A.—Yes. The more you build the roads, the greater objection the people will make to them. They want them still better. You have heard it said that the more a man knows, the more he sees that he does not know, and that same principle

applies to building good roads. The better the roads are, the more the people notice the bad spots.

Q.—What do you pay per day for men and teams?

A.—This year we have been paying $1.75 a day for labourers and $3.25 for teams when they are with the regular gang, and $3.00 a day for farmers' teams.

Q.—How do you get them so cheap?

A.—We have a lot of poor people in our township who are anxious to work.

In my opinion taking away the rsponsibility from the rural population is one of the worst features of public life. We want the people to feel that they are interested in the roads and that the roads belong to them. The trouble with all public questions is that some men will come out a little on the extreme side. I believe in commuting statute labour. About 40 per cent. of the people in our township are small land-owners and are assessed at from $200 to $400 and some are assessed at from $3,000 to $5,000, and we have one assessment as high as $65,000. The man with the small assessment may be a teamster and he uses the road more than the man with the $5,000 assessment who has a farm, and if you abolish statute labour the man who had a $400 assessment would pay no more than 40c., but under the statute labour system he has to do three or four days' work.

I think the city people should assist in building the roads because good roads will be a great benefit to them in reducing the high cost of living. We cannot do without township roads. Some of the county roads in our county are not used as much as our township roads. On one concession in our township it costs $1.00 a standard to draw the milk and in the concession north of that it costs $4.00 a standard. That is a big drawback to the company, and is caused by bad roads. I believe in civic associations because I think they help to educate the people to the value of good roads and help to keep the people interested in public questions. Sometimes I think we are over-organized and that proper attention is not paid to the different organizations. A few years ago an electric railway was proposed through the front part of our township and they wanted a loan from the township of $15,000, payable in thirty years. A by-law was to be submitted to the whole township and the money was to be levied on the first four concessions, and I thought that the 5th concession would receive just as much advantage from the road as the people on the 4th. The by-law was never submitted, but I always considered that the 5th concession should have been assessed, and I take the same stand with regard to improved roads.

We have more county roads in the County of Hastings than are necessary, and that has been caused by reason of the fact that some years ago, if a man was elected to the County Council, his chief aim was to get some road assumed as a county road and he thought by doing so he was conferring a favour upon the township, but the township roads can be built cheaper than county roads. We are now spending $5,000 of county money and $3,000 of township money, and if we had the whole $8,000 in the township we could have a better equipment. We all understand the necessity of good roads and what we want is the money and material to build them. It is said that the cost of living is going up and the labourer is getting more money for his work than ever, but is he any better off? I do not think he is. The man who worked for $13.00 a month enjoyed just as many luxuries as the man who to-day receives $30 a month. Everything has got into a higher standard, but the people have no more conveniences or no better mode of living. Money is the medium of exchange and was never intended for speculative

purposes. If a man comes to the city to buy a home he finds that the speculator has bought up the land and wants twice what it originally cost, and that has a great deal to do with the increased cost of living.

I think we should go to the Government and ask for cheap money. Old men have told me that the progress of England began when money was loaned at 2½ per cent. Holland was a great manufacturing country, but when England put money at 2½ per cent., the manufactories were moved to England, and England has been one of the greatest manufacturing countries in the world ever since.

SECOND DAY

Afternoon Session.

THE CHAIRMAN: The first item on the programme this afternoon is an address by Mr. J. H. Jackson, of Niagara Falls, Engineer to the Park Commission, on "Roads of Queen Victoria Park."

ADDRESS.

"PRINCIPLES AND METHODS—QUEEN VICTORIA PARK."

J. H. JACKSON, ESQ., C.E., ENGINEER TO PARK COMMISSION, NIAGARA FALLS.

In approaching the road problem no matter from what angle, it would appear that one is more likely to be bewildered with the wealth of information, rather than embarrassed by lack of advice upon any one of the multitude of technical points that are met with in actual practice. And indeed one is confronted with a problem somewhat similar to knowing all of the various kinds of breakfast foods in attempting to keep in touch with the processes, patented and otherwise, that announce in block type the complete solution of all roadway difficulties. Just here it may be remarked that many of them, if not all, possess certain merit, and if constructed under favourable conditions success will result, but that no panacea for all of the ills that roadways are heir to has yet been discovered, nor is it any more likely to be, than the discovery of perpetual motion. It is not, therefore, with any thought of bringing new and startling information before this association that the speaker ventures to say a word or two, but rather that by the reiteration of some of the old-fashioned standard principles, and the simple recitation of some of the observations and methods pertaining to road-building and maintenance, as carried out in the Queen Victoria Park System, some little enthusiasm may be stimulated and some grains of truth impressed more deeply than heretofore. There is another motive too, namely, the calling forth of criticism and opinions of those better informed in respect to this subject.

It is strange indeed that for the most part we are willing and anxious to discuss the details of work performed or new methods proposed, and find it difficult and uninteresting to consider such terms as "Care in Construction," "Attention to Details," "Keen Observation," etc., and yet one is led to think that the best processes are more often ruined by the man on the job than we ordinarily like to admit, and further that an inferior type of road-making can be turned into a distinct success with proper care and attention. We need more of the basing of our theories upon actual facts, and nothing but facts, and the willingness to correct our faults when observation proves that our facts have fallen down. This, you will observe, brings us back to the very primary principles of all scientific knowledge, namely, *first,* Observation, *second,* Theory from facts, *third,* Revision of theory as errors are discovered. I hold no brief for engineering or technical men, although a thorough believer in qualified expert services, but these remarks are brought particularly to my mind from actual experience with one of the best untrained foremen that it has ever been my experience to employ, one who was more than ordinarily intelligent, could take instructions rapidly and accurately, but yet looked with suspicion upon the word theory and could see no value in

cost data. As time went on it commenced to dawn upon me that the reports of work had a striking likeness, the thickness of stone was about 6 inches, the width of roadway was about 18 feet, the depth of drains was about 4 feet, the joints of pipes were cemented about as well as could be, and closer examination disclosed that the figures from which quantities and costs were determined were in like manner about as nearly accurate as might be, and by the time unit costs were detailed the various "abouts" had about resulted in a considerable error. I come before you then to plead for the thorough training of the whole road staff from the man with the pick through all the various stages to the Chief Engineer. To do this requires time, patience, judgment and sympathetic work not only with the foreman, but with the humble man at the bottom—more of the spirit of taking an interest in a man and his occupation rather than the gruff word and a kick that is so often seen, more of the inculcation of the principle that if you make a mistake I suffer, and if I make a mistake you suffer. I say this with a full realization that it will be looked upon as very nice theoretically but rather poor advice, but it is also said with the knowledge that it is being put into practice in at least one department with surprising results.

Before proceeding to a description of some of the construction and methods employed in road building in the Queen Victoria Park System, perhaps the subject in general might be looked at from one other viewpoint in an endeavour to realize that after all underlying principles are common to the various works that nearly all of us are employed in. Too often we are so busily engaged in examining details under the microscope to the exclusion of obtaining the broader prospect through the large telescope, and while a proper balance must be maintained between these two extremes neither one must be excluded from our vision. In landscape design the many and varied impressions sought to be conveyed are the result of more or less complex combinations of all that science and art of present day perfection brings to our aid, and yet when stripped of non-essentials the basis of all of the ideals may be summed up in the three words Utility, Proportion and Unity. Perhaps someone will object to illustrating or drawing conclusions from what is usually thought of as an aesthetic subject for such a practical question as road building, but let us see how nearly these three words may be brought home, and what benefit would accrue from applying them to road design. It will at once be admitted that commercial necessity is in the first instance the inception of the road idea. Too often, however, it is the only idea that is made use of. Unless the building of a road results in improved communication between centres, the cheapening of the ton-mile cost of haulage and the annihilation of distance, there is small justification for entering upon the expenditure for pleasure purposes. The construction must be useful before there is any reason to seriously entertain it. But why, after this stage has been reached, ought we not to proportion the road to its surroundings—be they rural, urban or boulevard—is the point to be made. About the farthest that the proportioning principle usually obtains is in that of proportioning the work to the size of our pockets, and elongating it to spend money in each of the various centres when good judgment would more frequently be displayed in using the simple mathematical operation of dividing the length proposed by two or even a larger number, and thereby increasing the standard of construction. Then again all roads should be proportioned to the traffic likely to pass over them, and this applies both to the depth of metal, the width of roadway, the quality of material and the surface treatment. Some attempt is usually made in this direction even if not under

the terms used here. Coming now to the areas alongside of the road improvement itself, much can in every instance be accomplished from a consideration of the whole width of highway in road construction, and particularly is this true in taking care of that very important element, the drainage problem. Water from adjacent areas, if intercepted before the road metal is reached, will save much anxiety when the maintenance has to be undertaken, and there is no reason why this should not be accomplished in an artistic way, if you will permit the expression, rather than by straight slashes through the sward that clash as colours out of harmony. Something can also be accomplished in overcoming the straight-line side slope upon our ditches where these are in the highway width, and the eye will be greatly relieved to observe a picture more as nature makes them.

The third principle, that of Unity, is the harmonizing of the various elements, both practical and aesthetic, to make one whole where every part is duly emphasized, and where no part strikes a discord. This is really of the realm of art more than that of science, and the designer frequently misses the point by endeavouring to see that it is not lost sight of when it should be the natural result if the other two features have been properly dealt with.

The Queen Victoria Park System, covering a length of some thirty-five miles, extends along the Canadian side of the Niagara River from Lake Erie to Lake Ontario, and within its area may be found examples of all of the main types of road from the unimproved through the various macadam stages to the city pavement, and in widths from twelve feet up to twenty-four feet, and some with provision for future widening to a maximum of thirty feet. The traffic is composed of every type from the pleasure vehicle including the automobile to the heavy-truck, both horse-drawn and motor-operated. The early improvement and building dates back over twenty-five years when conditions were entirely different, and when not as much was known and no funds available for a high type of road surface. Little attention was paid in the early days to drainage. Even the roadside puddle was not considered objectionable after a rain storm, and the natural slope of the first land selected for park work made easy the problem in this respect. However, the rapid advance in requirements, and the changed attitude of the public toward road matters have now rendered it necessary to build drainage systems, sweep the road surfaces, and provide dustless routes for the sightseer and those upon commerce bent. The first road-builder in this vicinity was very fortunate too, in having stable foundations and an abundance of gravel within park areas for construction purposes and surfacing. With such facilities and a watering cart nothing more was required to keep every one in a contented frame of mind. But what an awakening has taken place. In these latter days one must be provided with the latest type of heating apparatus, air pressure for unloading tank cars, steam heat, and pressure for top surfacing, not to mention numerous other appliances more or less useful and all carefully patented. And even then an unappreciative public exhibits anger, and freely criticizes when it gets its feet into tar and skirts into heated asphalt. One wonders what the end will be.

The main accomplishment in the Park Road System completed only last year was the building of the Niagara River Boulevard covering a distance of some fifteen miles between Niagara Falls and Bridgeburg. Originally designed as a waterbound macadam road because these estimates more nearly coincided with the amount of money available, or that it was possible to secure, this length has now developed into a fast route with asphalt and tar surfaces to prevent ravelling and banish the dust nuisance. The macadam surface is a standard width of eighteen feet,

with six feet on either side used for the joint purpose of an earth shoulder and a gutter leading to the catch-basins. The cross-section is so designed that by the simple removal of the shoulder the travelled portion of the roadway may be extended to the grass verge, making thirty feet fit for traffic. On either side of the roadway the areas are boulevarded and plantations of trees and shrubs are arranged to give most entrancing vistas of the beautiful Niagara as one travels the sinuosities of its shore line. At one time some thought was entertained of constructing an electric railway to adjoin the macadam roadway, but it appears not unlikely that this matter will give place to an early widening of the road as outlined, and the installation of a motor bus service for scenic and commercial purposes. Not only would the original outlay for this be much less than the standard railway equipment, but the maintenance would be approximately the same as present requirements. The installation of the drainage system, while not overly difficult (from having the river as an outlet) gave considerable trouble where the ordinary land levels were scarcely above high water stages. Catch-basins have been built at intervals of not over five hundred feet, and the cross-drain or main outlet has in each case been extended to the boulevard boundary to intercept the surface water at that point in preference to taking it at the roadside. With the now common agricultural methods where farm lands generally are being underdrained, the abutting owners are encouraged to tap the Park outlets, and it is expected that in a short time this problem will have been taken care of much more efficiently than is the case even now.

In these later times when the waterbound macadam road has been kicked around from pillar to post, and so many substitutes and improvements have been put forward and their merits shouted from the house-tops, one hesitates even to admit that he once owned MacAdam as a speaking acquaintance, and like Peter, thrice denies that he ever knew the man. And yet I risk the suggestion that the complete discarding of macadam roadway for new and untried paths is but to swing the pendulum too far in the opposite direction. This of course is frequently the case in the history of progress, and as in other instances of going to extremes, we now find some very respectable engineers who believe that MacAdam's theory was built upon something more than mere chance, and while the complete revolution in modern traffic makes it necessary to revise the old construction it does not seem altogether necessary to abandon it completely.

To illustrate the office methods two examples have been selected from work performed, showing complete details of unit costs. The first of these comprises the resurfacing of a small length of the main driveway within Queen Victoria Park itself by the Rocmac process, typifying chemical binders to which the product gluterin also belongs. The other instance is a surface treatment with heated tar, exemplifying such materials as Tarvia and natural and residuum asphalts. This work was carried out upon the boulevard roadway two miles south of the village of Chippewa.

ROCMAC RESURFACING—QUEEN VICTORIA PARK.

TIME.....May, 1913.
LOCATION.....Main Driveway, opposite Rambler's Rest loop.
LENGTH OF HAUL .....3,400′=.644 mile (from Victoria Park siding).
AREA TREATED.....Length 370′, width 21′=7,760 sq. ft.=863 sq. yds.
DEPTH REMOVED.....4 inches.
MATERIAL REMOVED.....370′ x 21′ x 4″=2,590 cu. ft.=96 cu. yds. (in place).

COSTS.

Labour—	Total.		Per sq. yd.
Removing old surface (96 cu. yds.)	$97 20	=	11.26 cents
Hauling 144 cu. yds. of stone and screenings from Victoria Park Station	119 08	=	13.80 "
Rolling	38 00	=	3.25 "
Re-surfacing	63 16	=	7.31 "
Foreman	60 20	=	6.97 "
	$367 64	=	42.59 "

Material—	Total.		Per sq. yd.
2-inch stone—114 cu. yds.—136.8 tons at $1.25	$171 00	=	19.82 cents
Screenings—30 cu. yds.—36 tons at $1.00	36 00	=	4.17 "
Rocmac Solution—374 gallons at 45c	168 30	=	19.50 "
	$375 30		43.49 "

SUMMARY.

Labour cost	$367 64	=	42.59 cents
Material cost	375 30	=	43.49 "
Total cost	$742 94		86.08 "

.07 mile costs	$742 94
1 " "	$10,600 00
1 sq. yd. "	86.08 cents

It will be seen that with a haul of nearly two-thirds of a mile a resurfacing job with four inches of metal in place was laid for a total cost of eighty-six cents per square yard, representing $9,400,00 per lineal mile for an eighteen foot roadway. The labor item amounted to forty-two and one-half cents, while the cost of material was forty-three and one-half cents. This may be taken as a fair example of heavy type resurfacing, which, while needing annual attention, ought to last from four to five years, when it would need to be partially reconstructed.

SURFACE TREATMENT WITH TAR—NIAGARA RIVER BOULEVARD.

TIME..... September and October, 1913.
LOCATION..... Boulevard Roadway, vicinity of Usher's reek.
LENGTH OF HAUL..3.4 miles.
AREA TREATED.....Length, 14,625' (2.77 miles), width 18'=263,250 sq. ft.=29,250 sq. yds
DEPTH.....½ inch.

COSTS.

Labour—	Total.		Per sq. yd.
Loading, hauling and placing stone	$861 03	=	2.90 cents
" " " " Tavia	353 71	=	1.19 "
Placing and removing plants	56 50	=	.19 "
	$1.271 24	=	4.28

Materials—	Total.		Per sq. yd.
½ in. stone—487.5 tons at $1.30	$633 75	=	2.14 cents
Tarvia "A"—14,307 gallons at $0.10	1,430 70	=	5.58
Freight, $188.35; demurrage, $32	220 35		
Soft coal for heating and operating roller	88 90	=	.30
	$2,373 70		8.02 cents

SUMMARY.

	Total		Per sq. yd.
Labour cost	$1,271 24	=	4.28 cents
Material cost	2,373 70	=	8.02 "
Total cost	$3,644 94		12.30

2.77 miles cost	$3,644 94
1 mile costs	1,300 00
1 sq. yd. "	12.30 cents

This was a carpet treatment of two and three-quarter miles of roadway where the average haul of material was 3.4 miles. The tar shipped in tank cars was placed upon the nearest railway siding, and heated by steam boiler, the same pressure being used to fill the distributor. The material heated to about 100 degrees Fahr. was hauled in the distributing tank to the work, where it was attached to the steam roller, and further heated to a temperature of 175 degrees to 200 degrees Fahr., and then steam pressure at thirty-five pounds was used to spray it onto the road surface. The hot tar was absorbed by one-half inch stone chips in the proportion of one cubic yard to sixty-five square yards of surface giving a depth of stone and tar equal to a little over half an inch. The quantity of tar for this treatment was one-half gallon per square yard. The cost of the work was eight cents per square yard for material, and four and one-quarter cents for labour. It is estimated that the only cost of upkeep to such a surface will be an annual tar spraying of about an eighth of a gallon per square yard at a cost of approximately three cents per square yard. The first cost of this surfacing, 12.3 cents per square yard amounts to $1,300 per mile for an eighteen foot roadway, and $316.80 per annum for maintenance.

ADDRESS.

"CITY AND TOWN STREETS."

A. B. McCALLUM, ESQ., C.E., CITY ENGINEER, HAMILTON.

There is being recognized more and more each year the necessity for hard, durable and smooth pavements, in the economic welfare of a town or city, upon which the vehicular traffic may be conducted with the least expenditure of energy. It is also being recognized that good pavements are about the best advertisement that a city has to a stranger within her gates. He may not remember the handsome buildings, but if the streets are bad he will never forget it.

It has been the general custom in most Ontario towns that find it necessary to pave at least some of the principal streets, to send deputations from their councils to other towns or cities to examine the pavements there. Very often representatives of different kinds of pavements visit the towns about to be paved and personally conduct a committee from the council to some carefully selected pavements in some distant city, paying of course all expenses. The consequent result may be seen in pavements in most of these towns, that are nearly always too expensive and often totally unsuited to the nature of the traffic going over them. It is a curious fact that while the average Councilman may be cautious in spending the city's money, in many ways he is reckless when he does so: when he votes money for pavements selected in following the methods just mentioned. The writer is in receipt of many communications asking which is the best pavement for some streets in some town or city, and an opinion is expected without knowing the conditions

governing the case. It is often stated that the traffic is heavy, which gives very little information unless the tonnage is also stated. Numerous vehicles may pass along a given street and yet the traffic may not be heavy. In fact, in the City of Hamilton there are cases where we have heavier tonnage on streets not in the centre of the city than we have on our principal streets. It is money well spent, in fact, money saved, for a municipality intending to pave streets, to retain the services of a consulting paving engineer to make a report upon suitable pavement and make the necessary plans and specifications in each case, with supervision by competent inspectors, under the engineer, during construction.

An ideal pavement should be cheap, sanitary, noiseless, not slippery in any kind of weather, and have a low maintenance cost. Such a pavement unfortunately does not exist for all locations, and no known combination of paving materials has yet obtained it, regardless of the statements of different paving interests or enthusiasts, who have discovered or patented some such combination.

The figures given for pavements mentioned herein are to be considered relatively only, although taken from actual cost sheets, but are apt to be misleading if used indiscriminately on account of the variable cost of materials and labour in different towns.

The first question that arises when a street is to be paved is what will be the probable quantity and character of traffic to which it will be subjected? Although it is an obvious fact that a street in a business section should be treated differently from one in a residential section, yet it is not done so in many cases. In the first case the paved portion of the roadway should be made as wide as the boundaries of the street will permit, while in the second, a width of twenty-four feet (24′) is quite sufficient. Any additional width is more than wasted because this additional width of paved roadway will increase in the ratio of its width the cost of maintenance, cleaning, sprinkling, and cuts for house services. It may be objected that carriages and other vehicles could not turn around in a street twenty-four feet (24′) wide. While many could not, yet with blocks of the usual length, such vehicles could go around the block. It is a very moderate statement to say that many thousands of dollars have been wasted in this country by making the pavements and roadways in residential districts unnecessarily wide.

Where street railway tracks exist through paved streets, they are a serious menace to the durability of the pavement. Unless the paved area outside the tracks is of considerable width (say eighteen feet) the traffic is so concentrated in narrow strips on each side of the tracks as to many times increase the traffic per foot of width on these strips, with the consequent wear and tear to the pavement. It is also impossible to maintain any kind of a pavement alongside a poorly constructed railway track.

When a street is about to be paved it is not always possible to keep the existing grade of the roadway to obtain the best grade for the desired pavement. It is doubtful if there is any other municipal improvement that will raise a louder howl of indignation from property holders than the grading of a street for a pavement. The average property-holder considers only the street directly in front of his property, and believes firmly that the rest of the street should be made to conform with that, regardless of drainage, ease of traction and appearance.

As water is the enemy of all pavements, provision should be made in clay soils for proper drainage.

Every writer on pavements from McAdam to the present has referred to sub-drainage as the first essential to successful pavement construction. Where the sub-

drainage is insufficient, the underside of the pavement is always damp, with the inevitable result of deterioration, and a tendency of the pavement to settle from its normal shape and grade. It may be assumed that any of the modern and practically water-proof forms of pavement now in use will have the sub-soil beneath it dry, providing no water percolates from back of the curb, which can be prevented by means of small tile drains beneath the curb. If the sub-soil be gravel or sand, giving natural drainage, no artificial drainage is required.

Macadam.

This is not a pavement. but as it is low in first cost, quiet, and satisfactory if properly constructed and used only upon residential streets where the traffic is not heavy, it is a good first pavement in a district not fully built up, where there will be considerable tearing up of the roadway for house services.

The usual method adopted for constructing macadam roads is to dump the broken stone on the road and roll to the form of the road, putting a certain amount of binder on top and wetting. The result is generally an uneven surface and rapid erosion after traffic has been upon it for a short time. Very seldom are large stones placed on edge on a proper camber of foundation, as brought out by Telford, although by so doing it will stand heavier traffic. As in all pavements, the roadway should be rolled before the stone is placed upon it to the proper camber, and not more than 8 inches (8") of stone placed before rolling with a fifteen (15) ton roller. This stone should be hard and not all of one size, although such a clause will be found in many specifications. Sufficient small limestone binder should be added and flushed and rolled until the voids are filled and the surface in the proper form. After two or three days the street may be opened for traffic. If it be desired to provide a practically waterproof and dustless macadam, then after about ten days' time the roadway should be swept to remove loose material and a distilled coal tar heated to a temperature of about 250 degrees Fahr. should be sprayed, using about three-quarters of a gallon per yard, and immediately covering with about one-quarter inch of sand, or stone screenings. After rolling once upon the following day a second coating of about one-half gallon per yard should be applied cold and again sanded. In about ten days' time the roadway will have the general appearance of an asphalt pavement, the penetration of the tar being from one to two inches.

The advent of the automobile has made necessary the protection of the macadam surface from unravelling, and removing of the binding material in the form of dust. Oils of various kinds have been in use for several years—more or less successfully. Crude petroleums which contain the largest proportion of pure asphaltum give the best results. The petroleums having a paraffin or naptha base are useless, as they will not bind, besides making a greasy slime and having an ill odour. It has been a common thing for an official to whom all oils look alike to purchase carloads of oil of unknown quality, sprinkle it from watering carts, in unrestricted quantity, instead of spraying. regardless of the road condition or weather. As a consequence, slimy mud has been caused by sudden rainfalls which forms an emulsion with the oil, and the oil has pooled in depressions in the roadway. It is necessary for the roadway to be first swept clean, be thoroughly dry, and have the oil heated and applied upon warm days.

Tar Macadam.

From plain macadam roads to oil and tar painted, and on to tar macadam is but a step. Some years ago in Hamilton tar macadam pavements were extensively laid and these were successful in some cases, but not in others. The failures were partly due to using a limestone which was not tough or hard enough and partly through the variable nature of the coal tar supplied. If tar used be not sufficiently refined, the light oils and ammoniacal liquors will disintegrate. It it be heated too much it becomes brittle and forms black dust. There are now tar preparations on the market which give a reliable uniform product. In every city having a gas works using various grades of coal the quality of crude tar from a given tank will vary. Even with the coal constant the tar drawn from the bottom of a full tank will often differ materially from that taken from the same tank when nearly empty. Most failures in using crude tar may thus be traced to the variable nature of the tar which would not have occurred by using tar refined to the proper uniformity.

The tar macadam pavements which failed as such in Hamilton were not, however, total failures. The pavements were levelled up with concrete and asphalt binder, and a sheet asphalt top placed on it at very small comparative cost and with excellent results. These tar macadam pavements cost from 97c. to $1.06 per square yard.

By the use of asphalt instead of tar a suitable pavement may be secured. Asphalt is applied in either of two ways, by penetration or pouring, or by mixing, as in the case of the tar macadam just mentioned. Using the penetration method, and after the foundation course has been rolled, there is placed a wearing surface of two inches thick (after compression with a road roller) of stone passing a two inch ring. If there is already a foundation of concrete, old brick, block or macadam of sufficient strength, no other foundation course will be necessary. On this wearing surface of compressed stone no water should be used, but with suitable distributors from one and a half to two gallons per square yard of an approved asphalt binder should be poured, depending upon the character of the broken stone. This binder should have a temperature ranging from 300 degrees to 350 degrees Fahr. and applied when stone is dry. Stone screenings are placed then on top sufficient to fill all surface voids, and the surface again rolled until smooth and true to cross section. Approximately one cubic yard of this material will cover fifty yards of roadway surface. A squeegee coat of approved asphalt from one-half to three-quarter gallons per yard is then applied, and again sufficient screenings and rolling when the roadway is open for traffic.

In the mixing method 1½-inch stone is dried and mixed with asphalt at the plant at a temperature not less than 300 degrees Fahr. and spread on the prepared foundation to a depth of three inches after compression with a roller while the mixture is still hot, however, and before rolling, stone chips or sharp coarse sand free from dust should be spread over the surface. It is important that the rolling be thorough, especially about manholes, etc. As for the penetration, a squeegee coat is spread and re-rolled as in the previous method. For this latter method an asphalt plant, either portable or stationary, is necessary. The crown of these bituminous pavements should be flatter than for macadam; in fact, should be about one-half inch per foot of width where the grade will allow, as in cold weather it is apt to be somewhat slippery. The average cost of macadam in Hamilton was seventy cents, and for bituminous pavements, as described, the cost would be from twenty-five to forty cents more.

Bituminous Concrete.

Instead of having the stone practically of a size, by grading it from sand to stone about one inch in diameter we get a Bituminous Concrete. Under this head comes proprietary pavements such as Bitulithic, Westrumite and Warrenite. The ingredients are combined and mixed at the plant and spread upon the prepared foundation about 2½ inches thick. These bituminous concrete pavements will cost about 95 cents per square yard, not including the concrete base, and are not intended for streets upon which the traffic is heavy. These may bear a large amount of light or rapidly moving vehicles with occasional teaming of coal or building materials and still be excellent pavements, but they will not stand the traffic on business streets in cities.

Sheet asphalt pavements are laid only in the larger cities in Ontario, on account of the skill required in properly mixing at the plant. Another reason is that such a plant is necessary. The refined asphalt is softened with a heavy mineral oil in the proportions of about from eighty-one to eighty-six parts by weight to from nineteen to fourteen parts of flux, and this forms the asphaltic cement. This cement forms from nine and one-half to eleven and one-half parts by weight of the asphaltic mixture which forms the wearing surface. Between the wearing surface and the concrete base is placed a binder of one-half to one inch stone which holds the surface to the base.

A few years ago several cities in the United States, and one or two cities here, including Hamilton, laid pavements without the binder course, roughening the concrete base instead. While it was successful on some streets with very little traffic, it failed on well travelled streets by rolling on the base. It was found almost impossible to get a roughened face without projecting stones too deeply into the surface mixture, and as a consequence much of the base was made too smooth, with the resultant rolling under traffic. In earlier pavements an open binder was used, but recently a binder much closer is used.

The asphalt surface is principally graded sand; in fact about ninety per cent. of the surface mixture with a small percentage of stone dust and mixed with the asphalt somewhat less than will fill the voids to prevent rolling. The surface must be hard enough to prevent caulking by horses, and soft enough to prevent cracking in winter, which is between comparatively small limits in this climate. For about two years the asphalt surface becomes about five per cent. harder each year, so that in repairing a penetration much less should be used for the new material.

In grading the sand we have followed the following standard as closely as possible, usually by mixing sand from two or more different places:

Passing 200 mesh	0
100	12%
80	12%
50	26%
40	11%
30	16%
20	12%
10	8%
8	3%
	100%

Two hundred mesh sand does not pack well, and is therefore not so desirable as 200 mesh limestone dust, as it tends to make the pavement mush in hot weather.

The grading given above is somewhat coarser than usual, but it has been found that this mixture gives a richer mixture with the same amount of bitumen, and will also lessen the drying out of the pavement.

The mixture should reach the work at a temperature of not less than 280 degrees, and spread with hot rakes for a depth of three inches to give a compressed surface of two inches. This requires also some skill and care to obtain good results.

The asphalt pavements will cost, including binder, but not the base, from 90 cents to $1.10 per square yard. It will stand up under heavy traffic better than any of the asphalt concrete mixtures (including the proprietary ones). It requires a certain amount of traffic to keep in condition, and for business streets it is better than the asphalt concrete mixtures that depend on the stone in them for their strength, which on account of the size, is apt to move about, losing the inherent stability of the pavement.

The asphalt sometimes becomes wavy which may be caused by various things, as poor rolling, moisture on the concrete base, clay brought on the binder, improper mixture of the ingredients and uneven raking.

Asphalt Block.

Asphalt block is composed generally of seventy-seven per cent. crushed gneiss, ten per cent. limestone dust, and thirteen per cent. asphaltic cement, put in moulds, subjected to a pressure of from two to three tons per square inch, after which it is slowly cooled in water, all of which is done at the factory. Their only advantage over sheet asphalt is that the blocks can be laid by unskilled labour, but there are few cases where sheet or concrete asphalt is not preferable especially on account of its high cost of about $2.70 per square yard without the base.

Vitrified Brick.

Vitrified brick pavements have been used extensively in some of the larger cities in Ontario, but in the case of Hamilton it is no longer used for pavements except alleyways, where it replaced concrete. A vitrified brick pavement is not so slippery as asphalt, is durable under moderate traffic, and requires no special plant for laying. The reason for the re-action against the brick pavements in some of the cities is that the people prefer wooden block as being much quieter and lacking the peculiar roaring noise produced by the passage of light wagons. Much discredit has also been thrown upon the use of brick by the careless and ill judged manner in which some manufacturers have sent out irregular or imperfectly burned brick, along with the laying by inexperienced city foremen; a brick that is too hard being just as bad as one too soft upon the bricks surrounding. One drawback is that a street paved with brick and grouted cannot be travelled upon for a week or two after being laid without injuring the joints, and this is almost impossible to prevent upon some streets, with the consequence that the flushers afterwards take it out and leave the edges of the brick unprotected, which under traffic causes the edges to chip off. The pavement is laid on a concrete foundation usually with a two inch cushion of sand to take up any unevenness of the brick and to spread the pressure on the base. The brick pavement, if well laid under good specifications, will give as good satisfaction under moderate traffic as asphalt block, while the cost is much less, being about $1.55 without the base.

Stone block pavements are only desirable for steep grades on streets of large

cities where the heaviest traffic exists. There is no such traffic in any city of moderate size, so that in Ontario there are very few places where it would be necessary. It is a difficult pavement to keep clean, is extremely noisy, and about the most expensive pavement that can be laid, costing about $2.90 or $3.00 per yard.

Wooden Blocks.

Treated wooden blocks have come into use in the past few years, and each year shows a large increase in the amount being laid. It is practically noiseless, free from dust, and will withstand the heaviest traffic. The writer examined pavements in the New York wholesale district where the traffic was of the heaviest, and after eight years' use these pavements were in excellent condition. In Hamilton, at the intersection of James and King Streets—where there is the heaviest traffic in the city—the wooden blocks show no indications of wear after four years.

Although some engineers call for less, the concensus of opinion is that the blocks should be treated with twenty pounds of creosote oil per cubic foot, and even then there will be a certain amount of swelling of the pavement, as a small percentage of water can still be absorbed. There will be a little bleeding of the oil from the blocks during the first summer after being laid, but it generally disappears by the second season. Longleaf Georgia pine has been the wood usually specified, but good results have also been obtained from Norway pine, tamarack, and birch, when properly treated. The joints may be filled either with grout or pitch, the latter being the better but increasing the cost of the pavement. The blocks are laid with the grain vertical, and laid in a one-inch bed of cement and sand upon a concrete foundation, the blocks being driven together but having expansion joints at each curb of two inches and every ten feet across the pavement. In Hamilton this pavement has become so popular that some residential streets have petitioned for it, on account of its quietness, although it is a costly pavement, running from $2.25 to $2.65 per square yard, according to the kind of block, whether plain or grooved for heavy grades. All of these pavements have assumed a concrete base six inches thick at least on business streets, with a mixture not less than 1: 3: 6, which will cost from sixty to seventy cents per square yard.

Concrete Pavement.

Pavements of concrete and reinforced concrete are now being built, but it should be remembered that the hardest concrete is less durable and softer than the average brick pavement, hence the hardest obtainable surface should be constructed. Two course and one course pavements have been built, and successful pavements have been built under either specification on residential streets. It is now entering into competition with brick and asphalt on business streets, and its use under such conditions is doomed to failure, as streets where such pavements ought to be laid cannot be successfully paved with concrete. While there is a wide field for its use on highways, and many streets in cities, yet it is the duty of the engineer to recognize that concrete has its limitations, like other paving materials. Its proper use, however, under proper specifications, will prove a profitable investment for property owners on many streets where low first cost is a consideration, as it can be laid at a cost of from $1.00 to $1.20 per square yard, including the base. Unfortunately, commercial interests have sent forth a lot of literature booming this pavement under all conditions, which will work to the injury of such pavements if carried out under such advice. The success of this pavement depends greatly upon

the way it is laid, and some of its failures may be traced directly to poor workmanship, even with good specifications. Other causes will be improper materials, lack of screening, improper mixing, careless placing of materials, faulty joints, neglect of protection and curbing. These pavements are sometimes reinforced with wire mesh two inches beneath the surface to eliminate cracks, and have successfully done so where otherwise, under the existing conditions, cracks would have appeared from settlement, freezing, or contraction.

Much misleading information is given out as to the grades upon which pavements can be laid. It is misleading because the conditions are not named, and while a grade may be satisfactory under conditions of light traffic, yet be far from it where heavy teaming exists. The writer has found that macadam or asphalt-macadam can be used safely to eight per cent., bitulithic to four per cent., brick to three and one-half per cent., asphalt to three per cent., wood two and one-half per cent., or where grooved or spaced, four per cent. for heavy teaming. For general traffic one per cent. may be added.

The presence of car tracks increases the cost of maintenance of a roadway principally on account of water seeping down alongside the rail, especially at the joints, and thus softening the sub-grade. The rail heads, especially at the joints, become uneven and also the treads on the wheels, producing vibration which injure the adjacent pavement.

It is the usual custom in asphalt pavements to use blocks of brick, stone or wood between the tracks and one foot outside, to take up this vibration and the concentration of traffic. Between the rail and blocks the space is filled with grout or pitch. In a recent report by the municipal survey for the City of Toronto, it was stated that this block protection was an unnecessary expense, and that the asphalt should be carried to the rail. The writer does not agree with this at all, as he has found that it was practically impossible to get a rail so rigid under heavy traffic that the vibrations sooner or later did not disintegrate the asphalt alongside the rail.

Street or suburban railways always prefer tee rails because of relative low cost as compared with the girder-lip rail. Unfortunately through most Ontario towns ordinary railway tracks are laid alongside which a first class pavement cannot be maintained.

Girder rails at least 7 inches high and weighing 80 or more pounds per yard should be insisted upon, for no pavement will last along the inside of a tee rail nearly as long as alongside a girder rail; a groove is worn out alongside the inner face of the rail, where loaded vehicles will pull off wheels and a condition exist dangerous to vehicular traffic. It is poor economy not to have the best type of construction for the tracks.

In conclusion I would recommend that, before any pavement is laid, the condition of sewers, gas and water mains be noted and that all probable house services be put in to obviate as much as possible the cutting up of the finished pavement.

ADDRESS.

"BRIDGE CONSTRUCTION."

Lucius E. Allen, Esq., C.E.

The subject I have been requested to speak upon this afternoon, is such a large one, and covers so many details, that I can only hope to touch upon some of the most important essentials of good bridge construction.

Before referring to modern practice in bridge construction, it may be of interest to refer briefly to the fact that practically less than one hundred years has elapsed since highway bridges on this continent, at least, assumed practical proportions, and began to receive the attention of engineers and bridge-builders. It is true that the Romans early developed the science of bridge construction, and erected some notable bridge structures in masonry, examples of which are still in existence. The early bridge-builders in this country, however, used timber as the material and followed out the types developed by Burr, Palmer, and Towne, who introduced the wooden latticed truss, which was usually covered, various types of which may yet be seen.

It was not until about 1850 that cast iron was first introduced by Whipple, and this material was succeeded some years later by wrought iron. Steel, the material now universally used in steel bridge construction, did not come into general use until about 1875, and to its use, due to its great tensile strength, the modern development in bridge construction received its greatest impetus.

The use of cement as a material for bridge construction is of comparatively recent times, although cement was apparently used by the Romans. The first concrete arch was constructed in 1869 of plain concrete and is known as the Grand Maître bridge at Fontainebleu Forest in France. It has a span of 116 feet. In 1871 a plain concrete arch of 31 foot span was constructed in Prospect Park, Brooklyn, N.Y., but it was not until the construction of a reinforced concrete arch in San Francisco in 1889, that iron or steel was first used in connection with concrete. At the present time, steel and concrete reinforced with steel are the predominant materials in use for bridge construction.

In this construction of a bridge there are certain essential requirements and principles that must be adhered to in order to secure satisfactory and permanent results, and I shall endeavour briefly to outline the fundamental requirements, which in my opinion, are absolutely essential.

(1) *Adaptation of Type to Location*:

There have been many "misfits" in bridges, and one of the first and most important steps in the building of a bridge is a careful study of the location, having special regard to the type of bridge best adapted to the particular location. The main points upon which a decision as to the best type of bridge to construct to suit the locality are:—

1. Length of span and height.
2. Character of river or stream.
3. Character of foundation.

Whether steel or reinforced concrete have been decided upon, the length of span and height above high water must be carefully considered. If the span is less than sixty or seventy-five feet, a low truss steel construction is usually used; if the span is eighty or one hundred feet, the high truss is usually used. It is also essential to consider whether two shorter spans with a pier in the centre is more economical than one long span; this being governed by the height and size of piers required.

The same conditions apply if reinforced concrete construction is desired. Up to forty or forty-five feet the girder-beam type of reinforced concrete is usually simpler and less expensive to build than the concrete arch, and it may be possible and more economical to divide the total span distance into a series of reinforced concrete girder beam spans of from forty to forty-five feet each.

(2) *Character of River or Stream*:

Due regard should also be given to the character of the river or stream over which a bridge is to be constructed. If the current is rapid and the water of some depth, the cost of constructing piers in mid-stream is very largely increased, and the one span type is preferable. On the other hand. if the stream is shallow and the foundation good, the cost of pier construction is greatly reduced.

(3) *Character of Foundations*:

In selecting the best type of bridge to build, too much care cannot be given to the character of the foundations available at the bridge site. For important structures, it is absolutely essential that the character of the foundation be determined by careful test. This may be done in several ways—by digging a test pit until solid gravel or rock is reached; by driving iron rods down until solid rock or gravel is found; or heavy iron pipe may be driven down and the same removed. When the above methods do not prove the foundation satisfactory, a wash-drill outfit may be used. This consists of a drill point to which is coupled one-inch iron pipe in four-foot lengths. Water is forced through the pipe by a hand force pump, which washes the material up through the pipe.

It is not advisable to use the reinforced concrete arch when foundation conditions are not of the best. A steel bridge resting on two concrete abutments will allow of some movement or settlement of the abutments without injuring the strength of the structure, although it is essential to allow a liberal factor of safety in the size of the footings, to give sufficient bearing power to sustain the bridge under maximum load without any settlement.

(4) *Design and Preliminary Plans*:

After a careful survey of the bridge site has been made and the character of the foundation determined, it is then possible to decide on the best type of bridge. As before stated, there are several types of steel and reinforced concrete bridges. any one of which may be selected to suit best the particular location. The expression which is heard so frequently these days in connection with the operation of railroads, " Safety First," should apply equally well in the designing of highway bridges, and the safety of a bridge depends almost wholly on its design and construction. One factor in the building of municipal bridges which has, perhaps, led to the construction of so many poorly designed and weak bridges in the past, has been the all too prevalent custom of allowing each bidder to submit his own plan and design—the result being that the municipality purchasing the bridge, without expert advice, naturally lets the work to the bidder submitting the lowest price. This practice, however, has in a large measure disappeared, owing to the requirements exacted by the Provincial Government, through its regulations and general specifications, under which all county bridges must now be built.

The design and plans for a bridge, whether of steel or reinforced concrete, should be carefuly prepared and checked by the engineer. If the bridge is of steel, an inspection of the truss and its connections should be made in the shops by the engineer, and especially when erected, paying particular attention to the rivetting and painting.

If the bridge is of reinforced concrete, the steel reinforcement should be checked from the plan, and during the course of construction a careful check should be made of each bar as it is put in place by the engineer or his inspector, as it is evident that after a concrete bridge is once completed there is no way in which to remedy a mistake in placing the reinforcement.

(5) *Construction of Bridges by Municipalities*:

There are two ways in which bridge work may be carried out in municipalities; the first is by letting all work by public contract, the second by organizing a competent construction force under the direct supervision of municipal officials. Where the amount of work is not very extensive and does not warrant the expenditure required for machinery and equipment necessary for carrying out the work, the contract system is probably the best; but where the work is sufficiently large, the county-operated system is, in my opinion, the better system. As the County of Hastings has developed this system to a large degree, I shall briefly outline its development and method of operation.

At the beginning of the year 1910, Hastings County had some 250 bridges, nearly all of them being old wooden structures. Several of these bridges had failed, killing several people and costing the county large sums for damages and repairs; on the adoption of a report presented by the chairman of the Roads and Bridge Committee in 1910, the present system of bridge construction was inaugurated. The programme of construction as laid out being a large one, methods of handling the work economically and efficiently were essential, and the following general plan has been followed.

At the beginning of each year, an inspection of those bridges that appeared to be the most dangerous to public safety is made, and the year's work is subsequently laid out. The council appoints at the beginning of each year a special Bridge Committee. This committee is in direct touch with the work through its chairman and engineer. The actual construction work is carried out by several gangs of men, each gang having a competent foreman who is held responsible for the hiring of the men and general efficiency of the work. The chairman and the engineer make frequent inspections of the work as it progresses. The foremen are required to make a daily report in writing to the engineer, covering the essential details of the work, materials or information required, and at the end of each month the engineer checks the pay-rolls from the daily reports for the preceding month. During the year 1913, six bridge gangs were employed. Each gang is supplied with a complete camp equipment, which reduces the so-called "high cost of living" of the men to a minimum. A complete equipment of the necessary machinery is provided, consisting of three Wettlaufer half-yard concrete mixers, concrete wheel carts, pumps, excavating tools, etc.

Local material, such as gravel, crushed stone, lumber, etc., is used when it can be secured of the right quality. The super-structures of all new steel bridges constructed within the past four years have been designed to meet Class "C" of the Provincial Government General Specification. The substructures for steel bridges are constructed by the county bridge gang. The plan followed in calling for tenders for steel bridges has been for the engineer to prepare the required plans and submit same to all companies tendering, so that uniformity in design has been secured. Reinforced concrete floors have been specified in all cases, and have proved very satisfactory, requiring no repairs. In most cases a surface covering of 4 to 6 inches of gravel has been put on the bridge floors over the concrete, which protects the concrete and also tends to hold the snow better in winter time than a smooth concrete surface.

The form-work for reinforced concrete bridges is made up from two-inch lumber surfaced on one side and two edges, and is used at least twice. Portland cement is distributed in car-lots to the nearest railroad station, and last year over 6,000 barrels were used in bridge-work. In the past five years an aggregate of

16 steel bridges with a total approximate span length of over 3,000 feet at an approximate cost of $155,000, and 39 reinforced concrete bridges, with a total span length of approximately 1,900 feet have been constructed in Hastings County.

The time at my disposal will not allow me to go further into the details and interesting points in connection with bridge construction, but before concluding this paper, I would like to again emphasize what I consider to be some of the most essential elements in good bridge construction, more especially in its relation to municipalities.

1. A careful examination and survey should be made each year of all bridges in any municipality, with regard first to their safety; secondly, state of preservation and repair; thirdly, character and amount of traffic using bridge.

2. A systematic plan and organization of the work required to be done by the county or township in advance and before any public catastrophe due to bridge failure can occur.

3. The execution of such work to be delegated by the municipalities to a competent official, whose qualifications and technical training shall meet the requirements of the Provincial Government.

There has existed and still exists at the present time in many municipalities an apparent laxity in the preservation of so-called permanent bridges, especially noticeable in the painting of steel superstructures. While the Provincial Government now grants one-third of the cost of constructing a bridge on an approved highway, the Government should, in my opinion, go further, and *require municipalities* to preserve permanent bridges by painting, etc., and could thereby economically contribute to the municipality some equitable proportion of such cost.

In conclusion, I wish to say that I have a number of photographs of different types of steel and reinforced concrete bridges, which I shall be pleased to show to any of the delegates at any time during the meeting, and to give any information that I may have available.

A MEMBER: What thickness of gravel do you put on your bridges?

MR. ALLEN: When it is first put on, it is about four inches thick and it wears down to about three inches.

Q.—Do you float the concrete?

A.—No, we make just a rough float surface.

Q.—What is the total length of the steel bridges constructed last year?

A.—3,000 feet.

Q.—What did they cost?

A.—$155,000.

Q.—What was the length of the cement bridges?

A.—1,900 feet; I have not the cost figure here.

Q.—Did you ever construct any bridges with old crib piers?

A.—I do not remember any that were constructed in that way.

Q.—Do you think it would be advisable to do so?

A.—No, I do not, except for a very light bridge. Of course the wooden crib pier under water will be preserved for a great many years. We have used old masonry piers by surrounding them with concrete.

ADDRESS.

C. A. MAGRATH, ESQ., C.E., OTTAWA, CHAIRMAN ONTARIO PUBLIC ROADS AND HIGHWAYS COMMISSION.

Mr. Chairman and Gentlemen:

When Mr. Henry, your Secretary, was kind enough to extend to me an invitation from your Executive to appear here to-day, I must confess that I refused, not with the idea of being disagreeable, but because I had been engaged with my colleagues in going about the Province of Ontario looking into this road problem at the instance of the Government of this Province, and I felt our first duty was to speak to the Government. As there is a certain amount of Irish in me, I thought if I started talking I might say to you some of the things that I should disclose to the Government first and there might be jealousy on the part of the Government. I hope we will have an opportunity of presenting our views to the Government at an early date. However, Mr. Henry pressed me to come and I told him I would be pleased to do so. I assure you I regard it as a distinct honour to be permitted to take any small part in this work that you are engaged in. When I went into it I had no conception of the value of highway work to this or any other Province in Canada. I care not what other men may be doing in the public service of this country, but I say there is no work of such tremendous importance to the people as this movement of good roads. There is absolutely nothing to touch it; that is the judgment I have reached in the short time I have been associated with you in a small way, and there is no honour that can be paid to any men in any country sufficient to recompense them for the work they are doing for the country in connection with good roads.

Is it not true, sir, that some of our rural districts are going back? They are not going ahead, and many of our cities are forging ahead with great rapidity. I say that is not a healthy condition and we must maintain an equilibrium between the country and the cities, and in order to do that it is absolutely necessary that we should have good roads. In going about the Province I found there was a feeling among the people that we were out for the purpose of doing something towards building up trunk roads. That was entirely wrong. We were out for the purpose of finding out what could be done in order to bring the great mass of the roads of this Province up to the standard that would meet the business needs of the people. (Applause.)

I am trying to keep clear of any views I may have to give to the people who engaged me, and I think I might say a few words to you about road uses and road abuses, especially the latter feature, road abuses. The last word has not yet been said as to the scientific building of roads. Science is busy on the roads, busy in the workshop, busy in the engineer's office, busy in all the activities in which human energy is engaged, and yet science is being overworked to withstand the aggressive efforts of those who fail to apprehend the true meaning of the word moderation. If we heard more of moderation we would hear less of the high cost of living. I do not think there is any more useful word or more valuable word in the English language than that of "moderation." It can be expressed in many ways. It can be expressed in taxes and in the saving to the people of thousands of dollars in connection with road work and road uses.

Then another strong characteristic in man that is being displayed at the present time is the unrest; we find one group of men tying knots in strings and another group of men untying them. Is it not true that one group of men are

struggling like yourselves to produce a road that will stand up against the traffic, while another group of men are endeavouring to produce a still greater dreadnaught in the way of a motor that would pull the Parliament Buildings from one corner lot to another? This is what is going on all the time. It is a splendid thing in humanity, but that is what the road builder is up against in this country. The greatest efficiency has never been evident in any line of endeavour without some of the privileges afforded to the public being abused; take for instance street cars—a public utility. You get on one and pay your fare and then many of us are indifferent as to whether we shove the end of the car out or not, overlooking the fact that all the time the damage we do to the property has to be paid for by ourselves. Possibly the rates do not go up, but it is quite possible that through our abuses they fail to go down. We find the same basis in connection with our roads. How are we to obtain moderation? Is it not by making the people realize that the roads are theirs just as much as their farms are their own? Is it not by getting the people to realize that in passing along the road they should do the same as in passing through their own property, keeping their eyes open and seeing what is going on? Don't leave it to any group of men either here or elsewhere to look after the roads. Every man should be interested in the roads. One way of making money is to save it and that would be an excellent way, it appears to me, of saving our taxes in connection with road-building. Get the people to drive along the road realizing that the roads are theirs. They do not belong to the people in Toronto or elsewhere. They belong to the people in the country where they are.

I want to say a few words about our report. I hope you will be generous towards it and I hope you will take it in the spirit in which it will be given. It may contain faults and many of them, but I can assure you that it is going to come forward as the best that we can produce under the circumstances. Therefore, I say, do not hastily start in to tear our report to pieces in case you should not agree with some of the details. I think it is only a fair request to make to you to consider the spirit in which it is going to be given. Let us bear in mind that reports do not build roads, nor will fine sentiment build roads. You need honesty of purpose on the part of your Government, be it central or local. That is what will build roads and what will give you the value of your money in building roads. Honesty of endeavour is required. You must have the right kind of man engaged in this road work; as far as my observation has gone in going through the Province, the people have been wise in that respect. I am very hopeful that you will obtain magnificent results before many years in your road system in this Province because I am hopeful that the Government will take hold of it in a serious manner. Your public men must take hold of this matter in a broad way and they must be broad-minded men, men who have the confidence of the people and who will stir the people up to activity. You must get a living partnership between those who represent your interests in the local Government and the gentlemen who represent your county institutions in connection with road matters; get them determined to accomplish good results and you will get them.

Now, I want to apologize to you, gentlemen, because I realize that I have not attempted to do justice to this subject. I feel that it will be quite unfair and unwise for me to go into the subject because I feel that if I did I would tell you too much and that might create jealousy on the part of the Government. Although I may not be associated with you in this problem any length of time, I can assure you there is nothing I have been engaged in in the West or the East,

nothing that I expect to be engaged in that is of such importance to Canada and this Province of Ontario as the very work that you have taken hold of so seriously. (Applause.)

THE CHAIRMAN: I will now call upon Mr. Frank Barber, C.E., York County, to lead the discussion on Mr. Allen's address on "Bridge Construction."

DISCUSSION.

FRANK BARBER, ESQ., C.E., CONSULTING ENGINEER OF YORK COUNTY, TORONTO.

I very often meet with the problem as to whether an old steel bridge is strong enough to take a concrete floor, or can be strengthened so as to take such a floor. This can seldom be done in the case of a high truss bridge, for if the bridge was properly designed for a wooden floor, it will not support a concrete floor, and adding new members is generally not practicable. The wooden floor will weigh not more than 20 pounds per square foot, and the concrete floor will weigh 70 pounds per square foot or more. There are certain cases, however, where the problem can be solved satisfactorily. In deck-truss bridges, often a third truss can be added to bear this extra weight. There is also a device that can be used with a pony-truss bridge. Such a bridge can often be concreted over, transforming it into a concrete truss with a concrete floor. Steel rods must be added to bear the extra stress due to the added load. I know of only one case, however, where this device has been used in Canada, in the Kingston Road Bridge over the Highland Creek, York County; but I do not doubt that the strengthening of old pony-trusses to prolong their life and to enable them to carry a concrete floor by making them into concrete trusses will be a common practice in time to come.

Concreting over old steel pony-trusses is only one way to make a concrete truss bridge. Such bridges have been built without an old steel frame work in a number of cases in this country in the last few years and have given perfect satisfaction in every case. They are suitable for spans over 40 feet where concrete deck beam bridges would leave the waterway too confined. They cost about the same or only slightly more than good steel truss bridges with concrete floors, so that they compare favourably even in first cost with steel truss bridges in almost any situation in spans up to about 100 feet and perhaps longer. But there are certain situations where the concrete truss bridge has peculiar advantages over the steel bridge.

Where a stream crosses a highway at an angle of let us say 45 deg., a 60 foot span on the skew would give equally as good a waterway as a 70 foot square span. Now steel truss bridges are rarely built askew, as they would cost considerably more for the same span than square bridges, but concrete trusses on the skew are practically no more expensive than if built on the square, and in this situation would therefore probably be cheaper in first cost than steel truss bridges. Another situation where the concrete bridge has the advantage of steel (and this applies not only to trusses but to concrete beams and arches as well) is where the roadway is on a grade. Steel bridges should not be built on a grade if it can be avoided, because it is practically impossible to prevent horses trotting down a slight grade, and this in time injures the joints and crystalizes the steel. Consequently, where a bridge is built part way up a hill, that is, where there is a high bank on one side and a low bank on the other, the grade is generally sharply broken at the bridge floor, which is made level. Now the interest of the travelling public would be better observed by leaving the whole on a uniform grade, including

the bridge floor, and this can be done properly only with concrete or stone bridges.

There have been ten concrete truss bridges built in Canada. The first one was the Middle Road Bridge between the Counties of York and Peel, of 80 feet span, finished in 1909. York County has since built two, Haliburton one, Simcoe County one near Collingwood, Amaranth Township two, York Highway Commission one, and Wellington County one.

I should like to take just a minute to mention the more recent developments in the longer Canadian concrete arches. In the longer arches, especially those in which the span exceeds 100 feet, designers have of late had recourse to arches with ribs instead of solid rings and with open spandrels supporting concrete floors instead of earth filling. The reason for using open spandrel arches in preference to earth-filled arches is principally because of the great weight of the earth filling, which must be supported by the arch ring and which makes the earth-filled arch uneconomical for many situations, especially in long and high arches. Another reason for preferring the open spandrel arch is that the design of an earth-filled arch cannot be exact. The horizontal thrust on the arch ring due to earth filling cannot be found exactly, and besides, it varies from time to time according to the amount of moisture the earth filling contains.

Amongst the longest arch bridges that have been constructed in Canada are:

	Clear span of main arch	Number of spans		Engineer
King George Arch, Oakville, Halton County, 1913	135 ft.	9 spans Length, 476 ft.	open spandrel	Jas. Hutcheon, County Engineer. Frank Barber, Consulting Engineer
Port Arthur 1913	130 ft.	1 span	open spandrel	L. M. Jones
Wadsworth Arch, Weston, 1910	118 ft. 6 in.	1 span	open spandrel	Barber & Young
Lynhurst Bridge, near St. Thomas. Elgin County. 1909	116 ft.	1 span	.....	Jas. Bell
Coaticook, Quebec, 1912	100 ft.	1 span	.....	
Bridgewater, Hastings County, 1913	100 ft.	1 span	.....	Lucius E. Allen
Bancroft, Hastings County, 1913	100 ft.	1 span	.....	Lucius E. Allen
Massey Bridge, Ontario Government, 1906	92 ft.	1 span	.....	W. A. McLean, Provincial Engineer of Highways
Queen's Bridge over Kettle Creek, Elgin County, 1908	80 ft.	2 eq. spans	.....	Jas. Bell
Spry's Bridge over Moira River, Hastings County, 1913	80 ft.	1 span	.....	Lucius E. Allen
Fergus Bridge, Wellington County, 1912	80 ft.	1 span	open spandrel	Bowman & Connor
Peterborough Arch Bridge	.....	3 spans	.....	T. S. Hay
Brewery Bridge, over Kettle Creek, Elgin County, 1908	75 ft.	2 eq. spans	.....	Jas. Bell
Orwell Bridge, Elgin County, 1908.	75 ft.	1 span	.....	Jas. Bell
Kirkham Bridge, Scarboro Township, 1910	70 ft.	1 span	.....	Frank Barber
Kleinburg Arch, York Highway Commission, 1913	65 ft.	1 span	open spandrel	E. A. James, Engineer to Commission Frank Barber, Bridge Engineer.
Victoria Bridge, Brantford, 1911	60 ft.	5 span. length, 250 feet width, 64 feet	open spandrel	T. Harry Jones

I believe that this list is complete or very nearly so, for spans over 75 feet.

If I were to try to lay down a general rule as to securing suitable foundations for a bridge, I should say that for anything larger than a culvert, foundation piles should be used whenever it is possible to drive them, and they should be driven to refusal. If the natural foundation is too firm to admit piles, then the concrete should be carried to a depth below the bed of the stream that will leave it safe from danger of scour. Many if not most of the failures of steel and concrete bridges are due to the undermining of foundations. For example, I examined a bridge lately that had been founded on hard shale, but the foundations, because they did not go deep enough, were undermined and the bridge collapsed. It had been built about ten years. Last fall I examined a stone arch that had been in use for over forty years. It was in a perfect state of preservation except that the foundations were undermined in places, and it was bulging out below the skewbacks. It is now in a hopeless state and will be rebuilt. If the abutments had been designed slightly thicker and had been carried down two feet lower, there is no reason at all why this arch should not have lasted at least forty years more. I have purposely chosen this case to show that it sometimes takes a long time for faults in design and construction to develop. The fact that a bridge is standing at any time is not a proof that it has been properly built, nor that it is safe. Perhaps it may be thought that where a stone arch lasts forty years it has done all that should be required of it, but if it can be made to last twice or three times as long surely it is a mistake not to design it properly. To show that forty years is a very short lifetime for a good bridge, I give you this case. All the bridges in France were listed several years ago and nearly fifty per cent. of them were found to have been in use for over one hundred years and some of them for several hundred years.

It is a fact that I sometimes meet men who do not wish to act on these principles in regard to foundations. I have been assured different times that quicksand is a satisfactory foundation for a bridge. Do not misunderstand me and suppose I am now referring to York County Commissioners. I will do them justice. Not only in my time but before it the officials of this County have been very ready to seek good bridge foundations. But here I have in mind odd clients in different parts of the Province. A civil engineer means by quicksand any friable material filled with water, and of course there are different kinds of quicksand, and some kinds of it are better than others; but if *any* kind of quicksand makes a satisfactory bridge foundation, my whole faith is heretical. I shall quote you a well known work upon this. It mentions the case of a foolish man who built his bridge upon the sands.

Several Members: His *house*.

Mr. Barber: No, it was a bridge, was it not? "And the rain descended and the snow melted and the floods came and it fell, and great was the fall of it." And any of you who may have chanced to read this Book may remember that it compares this man very unfavourably with a certain wise man who built his bridge upon the rock.

In order to protect the approach-fills, the side slopes should be easy, not steeper than one and one-half horizontal to one vertical, and they should be seeded down. It is often well worth while to plant willows along the banks of the stream to prevent the course changing so as to threaten one or other of the abutments.

A MEMBER: Can you suggest something different from willow? It is not a very desirable tree.

MR. BARBER: I have taken that question up with one of the staff of the Agricultural College and I have not been able to find anything that will give such all round good results as the willow.

You know perhaps that the height of a bridge effects the cost more than does the span. For instance, the abutments for a 50 ft. span would be almost identical with and would cost the same as the abutments for a 100 ft. span of the same height. The abutments and wings for a bridge 10 ft. high (i.e. with floor 10 ft. from low water level) and for 16 ft. floor would contain in a typical case 164 cu. yards of concrete; those for a bridge one foot higher would have 188 cu. yards. The difference is 24 cu. yards and if concrete were costing $7 a yard would be $168. But a difference in span of one foot of a good steel bridge with concrete floor of about 100 ft. span would only be about $50, so that it would cost over three times as much to raise the floor of this bridge one foot as to increase the span one foot. For higher bridges the difference for each foot in height is greater: the difference in concrete between abutments and wings for a bridge 15 ft. high and one 16 ft. high is 30 cu. yards, which at $7 a yard is $210. Where the bridge floor is 20 ft. or more from low water, ordinary abutments and wing walls to retain the fill are generally not economical, and shore spans should be used with piers but no wing walls. As an example, last year we called for tenders for the Angus Bridge over the Nottawasaga where the floor was 20 ft. from low water, both ways, on a design using ordinary abutments with splay wings, and also on a design using piers and concrete beam spans. The latter was found to be about $500 the cheaper.

The level of high water will often determine the height of a bridge, for it must be high enough to be out of danger from floating ice and logs. The high water will often leave its mark, and in the smaller streams will be used as the height to which the water is expected to rise in the future. Or it may even be that in the case of smaller streams local authorities will be consulted and an average of the levels as given by all the high water liars of the districts will be found by the method of least squares. On the larger streams a more extended study of the river must be made, but the subject is too technical to look into here.

In the case of bridges where the floor is placed well above the high water in order to suit the level of the adjacent roadway, deck bridges will always be used in preference to through spans or pony-trusses.

A MEMBER: For what spans are concrete beam bridges suitable?

MR. BARBER: In the case of spans under seventy feet, deck concrete beam bridges will in most cases be cheaper in first cost than steel truss bridges. They are being used to a greater extent than ever before. An economical design for a 60 ft. deck beam span for a 16 ft. roadway, for instance, consists of two concrete beams 4 ft. deep, 9 ft. apart centre to centre, with a heavy slab resting upon them about 12 in. thick. Here the distance from the top of the floor to the underside of the beams is 5 ft., and this would prohibit its use in situations where high water would rise above the bottoms of the beams. For spans under 30 ft. however, concrete deck beam bridges can be made about as shallow as steel beam bridges, which they are largely displacing.

Q.—What sized steel beams should be used for 40 ft. clear spans?

A.—This passes the limit of economical steel beam spans, which is about 35 ft. Thirty-inch Bethlehem beams can, however, be used up to 50 ft. spans for 15 ton

rollers, but they are not economical, except perhaps for very wide roadways as in city streets. Concrete beam bridges can be made about as shallow as steel beam bridges for equal spans, and concrete beams can be used for longer spans than steel beams.

Q.—Which costs the most money?

A.—Concrete beams should generally be the cheaper. For spans up to 18 or 20 ft. concrete slabs without beams but reinforced with steel rods are the most economical except where there is a heavy fill to be placed over the culvert, where an arch should be used if possible.

Q.—What thickness of slab should be used without beams for a span of 18ft.?

A.—To carry a 15 ton roller it should be 18 in. thick.

Q.—What sized reinforcing should be used?

A.—Theoretically it does not matter what size is used. If smaller rods are used it takes more of them. But I advise ¾ in. round rods from practical considerations. They are the smallest rods that can be brought at base price and the largest that can easily be bent cold.

Q.—Can you tell us the cost of a slab superstructure for a span of 18 ft.

A.—It would contain about 18 cubic yards of concrete and about 1,700 lbs. of steel rods, and might cost about $200 exclusive of the fence, though the cost would depend upon local conditions as to the cost of gravel, etc.

Q.—Would six I-beams, 6 in. deep, embedded in the concrete take the place of the steel rods?

A.—No; and small steel I-beams embedded in the concrete and thus used for reinforcement are not economical reinforcement. They cost more per pound than rods and you get some steel where it is not required. With the rods on the other hand, they may be placed just where they are required to resist the tensile stresses. Thus near the middle of the slab the steel is of little use, except as near as possible to the bottom of the slab.

Q.—What load would a concrete slab 18 ft. in span carry without reinforcement?

A.—It would not be safe for any load.

Q.—What percentage of cement would you recommend for slabs?

A.—100 lbs. cement to 2 cubic ft. of sand to 4 cubic ft. of screened gravel. For superstructures, pit-run gravel should be separated into sand and gravel with a screen before proportioning for concrete. Using a poorly graded mixture which nearly always contains an excess of sand merely to save the cost of screening is wasteful. The strength of the concrete is the strength of the mortar (sand and cement) and the pebbles of gravel are added as fillers or cheapeners. Consequently it is good economy to put in as many of these fillers as possible. When you pick up a handful of pit-run gravel which is suitably graded for concrete it should be a handful of stones with only sand enough to fill the voids in the pebbles. When these principles are better understood no one will think of using gravel for concrete containing an excess of sand.

Q.—Do you think it pays to use twisted steel rods rather than plain round or square rods?

A.—No, I do not think that twisting is necessary.

THE CHAIRMAN: It gives me pleasure at this time to ask Comptroller Thomas Church to address you for a few moments.

ADDRESS.

COMPTROLLER THOMAS CHURCH, TORONTO.

Mr. Chairman and Gentlemen of the Ontario Good Roads Association:

I am very glad indeed to be with you here this afternoon and to take some little part in your annual convention. The Mayor has been very busy the past two or three days and had to attend a meeting this afternoon of the Industrial Exhibition and regrets that he is not able to be present with you.

Millions of dollars have been spent that should not have been spent, and money has been left unspent that should have been spent. Millions of dollars have been expended in this country in building railways, but very few dollars have been spent on the highways of this country. It is a deplorable fact that the people of Canada have spent millions in building railways and scarcely anything to improve the highways of the country. The work has now been taken up by the Ontario Government and other Provincial Governments, and a plan of education has been launched not only in Ontario but throughout the West, and I do not think it will be long before we will have good roads in the Dominion of Canada. We will have municipal-built local lines and Government-constructed trunk lines. I predict that we will have a highway from coast to coast before very long that will compare with the roads in the United States and in the Old Country. I am sorry that our Government is so far behind the times. The farmer must have good roads to get his produce to the market, and when the farmer has good roads it is a benefit to the city people as well, because they can buy their produce cheaper.

I am sorry that the Government is not going to reintroduce the Highway Bill this session. We had a conference with them last Thursday and I understand the Bill will not be re-introduced this session. The Federal Government in the United States has made arrangements to spend $400,000,000 on good roads during the next five years, and it is going to spend it on the roads from the Atlantic to the Pacific. The way it is going to spend it is this: It has totalled up the aggregate number of roads in the different states of the union and it is going to vote this money to the states on a percentage basis, Alabama will have 2½ per cent. and New York will get a much larger percentage. The money will be handed to the State of Alabama and the State Legislature will spend the money on a system of roads which will be permanent and have concrete foundations. The roads must be constructed in accordance with the requirements of the Federal engineer. The state will take the money and the Government treasury notes and deposit them in the treasury; it will pay the Federal Government 4 per cent., and the Federal Government will be able to borrow the money for 3½ per cent. They are away ahead of us in this matter.

I congratulate you, Mr. President, on the good work your Association is doing. The City of Toronto is proud of the members of the Ontario Good Roads Association. Toronto put up $375,000 towards roads in the neighbourhood of 50 miles of Toronto. About 16 miles of road have been constructed and, when we get through with all the roads in that area, we will probably go out a little farther. I hope as the County of York is leading the way and the City of Toronto is working with it that this good work will spread throughout the Province. Next year when you are making up your programme, I hope your Executive will include in the list of entertainments a luncheon from the City of Toronto. We would be glad to entertain the men of this great body because you are doing a good work through-

out this Province. The roadway is a common basis of communication between the cities and the townships, and the whole country is interested in the work you are doing.

I congratulate you on the splendid convention you have here to-day. I was at your convention three years ago and I can see that you are making great progress and hope you will continue in the good work. If you do, there will be no fear as to the future of the good roads movement in the banner Province of Canada.

DISCUSSION.

JAMES A. BELL, ESQ., C.E., COUNTY ENGINEER OF ELGIN, ST. THOMAS.

Mr. Chairman and Gentlemen:

I was pleased to hear Professor Laing of the University of Toronto this morning state the work he is doing in educating young men in road-building. It must be apparent to every person at this convention that road-building has come to stay, and in the near future we are going to have better roads than we have had in the past. In order to get these roads it will be absolutely necessary to have technically trained men to build them. Road-building is only in its infancy to-day. On the other side of the line, they are going ahead of us by leaps and bounds. My own experience has been that the great difficulty in this work is to get the proper man to superintend the construction work. A great deal of the failure in road-building is owing to the fact that engineers cannot get good men to superintend the work. A first-class inspector will bring the work to completion in a proper manner. Whether you are building a road of asphalt or tarvia or bithulithic it is impossible to make a good road unless you have a concrete base. A great many roads are being built on the other side of the line wholly of concrete, and in order to build these roads it is necessary to have all the work done in a first-class manner. They must be thoroughly drained. In doing road work in a city or even in the country, the engineer does not want to stop the traffic more than is absolutely necessary, and a concrete road is tested the first day it is opened. If it gives way then it will soon go to pieces; but if it will stand the traffic the first day, it will get harder every day thereafter. You must have the particles mixed together in a proper manner or you will not have a good base. The wearing of the stone surface will depend very much on the hardness of the stone that is used. I say concrete roads will be used more in the future for the reason that nearly all of the material for concrete roads can be secured in almost any part of the country. There are creek bottoms where there is plenty of gravel and there are quarries throughout the country where first class stone can be secured. It is a little more difficult to get the material for the wearing surface because it is difficult to get rock hard enough for that outside of the North Country, but as that is only a small proportion of the whole, it is not a serious matter. Concrete roads are built in one and two-course work. One-course work means that the whole mixture from the bottom to the top is all the same. Suppose you use one of cement and two of sand and four of stone; it is necessary that the sand and the stone should be separated first, because you cannot take the run of a gravel pit and make a proper concrete road. You can take the run of a gravel pit and make a proper abutment or retaining wall, but road construction is a different

matter altogether. You must have the very best and that can only be got by separating the material and then mixing it again. Then you can get the concrete that will stand the effect of the water. The whole thing in the construction of a concrete road is to try and get a good hard surface. If you use soft stone, it will not stand the heavy traffic.

One thing that should be kept in mind in the construction of a road is how much it is going to cost to keep it in repair. If it takes a lot of money to keep it in repair, then it will be an expensive road in the end, but if you can construct a road that will take very little to keep in repair, you will have a serviceable road and one that will not be expensive. In Wayne County in the State of Michigan, they constructed 30 miles of road in the years 1909, 1910 and 1911, and the cost of the repairs of those 30 miles was $2.66 per mile. The principal expense on a concrete road is keeping the ditches in repair. If you construct a single track road, it should be trussed out with shoulders of gravel extending over 2½ feet.

A Delegate: In the Town of Sarnia from which I come, the Ontario Government constructed in the town about a mile or a mile and a half of concrete road, and they used one mixing. The gravel was got from the River St. Clair and mixed with sand. It was seven inches thick on the edges and eight inches in the centre and the road was 16 feet wide. Would you consider that wide enough?

Mr. Bell: That depends on the amount of travel; ordinarily speaking it is wide enough.

Q.—Would not it be better to have 18 or 20 feet?

A.—Certainly, but you must remember it costs a good deal more than a 16 foot road with shoulders of gravel on each side, and is plenty wide enough for two vehicles to pass.

Q.—What did you say was the cost per mile?

A.—An ordinary 16 foot road will cost $13,000 a mile. The Government estimated it at $16,000 per mile. You have got to take everything into consideration. Under ordinary conditions you can construct such a road for $13,000 per mile.

Q.—Would you consider good river gravel as good as stone from the North Country?

A.—No, trap rock is better. There is a lot of granite in the St. Clair River gravel and there is also some limestone.

ADDRESS.

"TOWNSHIP ORGANIZATION."

W. A. McLean, Esq., C.E., Commissioner of Highways for Ontario.

Mr. President and Gentlemen:

When I came into the hall a short time ago, I did not expect to be called on to speak to you this afternoon. I have been so frequently a speaker at your conventions that I thought it would be a good plan for you to get on without me this time. I understand that the Chairman of the Ontario Highway Commission has spoken to you this afternoon and he has, I am sure, explained to you fully and in detail all that the Province intends to do. (Laughter.) As that side of the question is disposed of, I need not say any more about it, but there is one subject I can speak of, and that is what the townships can do for roads. I am fully con-

vinced that the big problem is what the townships have to do. Wherever I go in studying the road question I find that countries and states, in building permanent roads, have had a starting point. They have usually commenced with their most heavily travelled highway. They have built roads leading out from the market towns and shipping points, but that is slow work. You can only accomplish a limited amount of permanent work every year, and for a long time a great percentage of the roads in Ontario will have to be maintained as earth or cheap gravel roads by the townships.

It has been my privilege from time to time to look into municipal organizations in different provinces and countries. I find invariably where the people have been encouraged to take care of themselves through their municipal organization, their status in manhood and in good citizenship is higher than where they have been taught that everything must be done for them by a central organization. The central organization can help you and do a great deal for you, but I believe that the great responsibility should rest with the people themselves. I am happy to say that out of my own investigation, I have come to the firm conclusion that the municipal organization of Ontario compares favourably with that of any other country in the world, especially considering the age of this Province. We have a few steps to go yet before reaching what has been attained in England and France and some of the older countries, but we are approaching and have got very close to some of their highest ideals.

In handling the road work of Ontario through the townships and any other authorities, the essential feature of it all is "Organization." The object of all municipal organization, is co-operation. The departmental store is simply a scheme of organization and every organization should have a single permanent head. If the head is removed the vitality is lost. The thing for us to do in Ontario is to see that our municipal road work has a head. At the present time it consists of innumerable tails. In every township I find from 50 to 200 pathmasters looking after the work. Now, if you want statute labour, very well, I won't argue with you over it. And if you want your pathmasters, very well, but they should be under a single head. The great difficulty of the township organization in Ontario is that the municipal road work has not a head. Just as you have a clerk and a treasurer permanently on the job, so you should have a permanent road foreman, and by doing so you will bring out of all this pathmaster system unity and uniformity. By this means you can establish a standard of roads and see that that standard is reached. You can carry on the work with continuity from year to year; but as it is to-day, pathmasters come and pathmasters go and the man that follows cannot tell what his predecessor has had in view. The result is that the work is nothing but patch work from year to year.

Driving over the roads of a certain township last summer I saw a party at work doing their statute labour, and as I came up they stopped and stood aside to let me pass. I pulled up and said, "What do you think you are doing here?" They were making an awful mess of the road. The man who seemed to be in charge drew a pipe out of his mouth and said. "We are working for the King." I looked at their outfit and what they were trying to accomplish, and said, "Well, gentlemen, God save the King." (Laughter.)

I do not mean to say anything unkind of the old system of statute labour. We all know what it has accomplished and out of respect for what we have done ourselves and the good time we have had on the roads, we all think well of it. (Laughter.) But the time has come when it ought to be dispensed with. A

greater amount of good can be accomplished by putting it out of the way entirely. In our township organization we should remember that the council is the board of directors and the road foreman is their manager who acts for them and carries out their instructions. The foreman or superintendent should lay his work out in a systematic way. Early in the season he should see that the earth-work is done; in the summer time when the ground is too hard to handle, he can build cement culverts, and when the fall comes he can gravel the roads or improve them in any other way that the circumstances of the township permit. In clay townships he can employ the split log drag and see that it is used at the proper time. We can take care of the heavily travelled roads by stoning and gravelling them, but there is an immense mileage of roads that for years to come will have to stay earth roads and the great salvation of them will be the systematic use of the log drag. I can assure you that as far as I am concerned, I am anxious to co-operate with the townships and give them all possible assistance. (Applause.)

REPORT OF COMMITTEE ON RESOLUTIONS.

1. Moved by Mr. McKay, and seconded by Mr. Beam:

That the work on the roads of the Province should be done under definite plans for permanent improvement.

That the Province should pay one-half the cost of construction and maintenance of the county road systems, and the full cost of Provincial or trunk roads. Carried.

2. Moved by Mr. Kennedy and seconded by Mr. Parsons:

That this Association place on record that they consider a tax on automobiles should be based on the English system and should be at least 50c. per horse-power.

Mr. Vermilyea: We have repeatedly passed motions that the tax should be $1.00 per horse-power.

Mr. Kennedy: I will change it to $1.00 and make the motion as follows: Moved by T. L. Kennedy and seconded by Mr. Vermilyea:

That this Road Association place on record its desire that automobiles should be taxed $1.00 per horse-power, and that the money derived from such tax should be devoted to the building and maintenance of roads.

Mr. Pugsley: It is the large automobiles that do the harm and I think the tax should be graded from 50c. up. I do not think it should be $1.00 per horse-power.

A Member: I think the license fee should be determined by the horse-power, and I think a light car up to 30 horse-power should only pay 50c. per horse-power, and above that, on a sliding scale of 75c. and $1.00.

Mr. Sterling: I move the following:

That the taxes on automobiles be 50c. per horse-power up to 20 horse-power and including 20 horse-power; from 20 to 30 horse-power, 75c. per horse-power; and from 30 horse-power up, $1.00 per horse-power.

(On Mr. Kennedy agreeing that this be substituted for his original motion, the motion was carried).

3. Moved by T. L. Kennedy, seconded by S. L. Squires:

Resolved, that the Secretary-Treasurer receive the usual honorarium of $50.00 for his services for the past year. Carried.

4. Moved by A. M. Chapman, seconded by T. L. Kennedy:

That the Executive Committee confer with the Canadian Passenger Agents' Association *re* transportation to the Ontario Good Roads Association Convention. Carried.

5. Moved by Wm. Scott, seconded by A. A. Colquhoun:

That clause 606 of the Municipal Act be amended so that the municipalities be not held responsible for any damages caused to motor vehicles travelling on the highway. Carried.

6. Moved by Mr. Pugsley, seconded by Mr. Beam:

That a vote of thanks be tendered to the retiring President for the splendid way in which he has looked after the interests of the Association during the past year. Carried.

7. Moved by Mr. Parsons, seconded by Mr. Vermilyea:

That a vote of thanks be tendered to the municipality of York for their kindness in loaning this hall for the purpose of these meetings. Carried.

8. That we approve of the recommendation of the Executive for an increase in cost of motor vehicle licenses and taxation of railways to form a fund for highway improvement purposes. Carried.

9. Moved by W. Chas. Bush, seconded by J. W. McLeod:

That the Government be asked to extend the provisions of the Highway Improvement Act to organized townships that have abolished or commuted Statute Labour and established a good organization for the construction and maintenance of their roads. Carried.

10. Moved by A. Denholm, seconded by D. H. Moyer:

That this Convention place itself on record as being in favor of the abolition or commutation of Statute Labour in organized townships. Carried.

11. Moved by T. L. Kennedy, seconded by K. W. McKay:

Resolved that the incoming Executive be requested to consider the advisability of holding the next meeting of this Association between April 1st and November 1st of the year 1915, in Toronto. Carried.

12. Moved by K. W. McKay, seconded by D. H. Moyer:

That the Municipal Act and the Highway Improvement Act should be amended so that moneys raised by debentures for Highway Improvement purposes and the amounts received from the Provincial Treasurer on account of expenditures under the Highway Improvement Act shall form a special fund to provide for expenditures under the said Act only. Carried.

REPORT OF NOMINATING COMMITTEE.

Honorary President:—T. L. Kennedy, N. Vermilyea.

President:—J. A. Sanderson, Oxford Station.

First Vice-President:—S. L. Squires, Waterford.

Second Vice-President:—K. W. McKay, St. Thomas.

Secretary-Treasurer:—George S. Henry, M.P.P., Oriole.

Executive Committee:—F. A. Senecal, Prescott County; T. E. Allen, Hastings County; R. H. Lush, Peel County; J. J. Parsons, Haldimand County; W. H. Pugsley, County of York; C. R. Wheelock, Dufferin County.

We also recommend that the two Honorary Presidents be invited to the meetings of the Executive.

THIRD DAY

Thursday, February 26th, 1914

Morning Session.

ADDRESS

"DRAGGING EARTH ROADS."

A. Denholm, Esq., Reeve of Blenheim.

Mr. Chairman and Gentlemen:

The principle of good roads is now so generally accepted by our whole population that discussion of their desirability is superfluous, but the idea of what constitutes good roads varies with the person to whom you talk. The automobilist and the resident of the city and larger towns associate it with the idea of paved or concrete streets running continuously through counties, connecting the large towns and cities to be paid for by the residents by whose property the road runs. The farmer and resident of the small town associate it with the idea of a road good enough to draw reasonably heavy loads of their produce to market or to have a comfortable buggy ride on, reaching to their own respective market town or shipping point and paid for by the municipality or by the much abused statute labour system.

The speaker is in favour of the latter viewpoint, so far as the direction in which the roads should point, and also in favour of a system which will give reasonably good roads to every farm gate, bridged, drained, graded and with a surface which will be good as far as possible all the year round.

Some confusion has been caused in many minds by the persistent use of the term "permanent" and this has been associated with the idea of high initial expense. As a fact no road, even the costliest, is permanent. The most expensive yet devised requires constant attention and supervision, necessitating continuous expense for maintenance. Now it is evident that if a road system can be constructed which, at low initial expense and a modest cost for maintenance, can be applied to the greater part of the roads of our country, we will have conferred on our country a benefit greater than can well be imagined. We propose to show that the log drag meets these requirements, and to give the reason why.

In the first place, the foundation requirements of a good earth road are the same as for the paved or concrete road—drainage, bridging and grading. The bridging and grading on two-thirds of the roads in the older part of Ontario are very respectably maintained to-day, while the drainage has been wonderfully improved in the past twenty years. But the surfacing with concrete or stone macadam is a heavy item, and its cost prevents the general adoption of a good road system for all the roads of the country. Yet the prime necessity of the good roads system is that it must be applicable to the roads in front of every farm gate, so that the problem that must be faced to-day is some plan for road surfacing that will be adaptable to all or nearly all the roads through the rural and village sections of the various counties.

Fortunately, this question has been solved for us and in a most inexpensive way. The log drag devised in very recent years and only slowly coming into

use, meets the very condition we are facing. And last of all, the more clay there is in the soil, the better the drag does its work; the more troublesome the road has been in the past, the better the results achieved by the drag. The log drag may be very cheaply made at the farm and it may be purchased ready-made in steel. But I am inclined to think that the log is more effective than the metal. The principles which make it effective are two—the working of the earth to a crown in the centre of the road from which water will flow off naturally and readily to the road ditches, and the doing of this work when the earth is still slightly damp after the frost has gone out or a rain has fallen. The latter condition should be emphasized. The reason is this, that the working of clay while in a putty-like condition causes a result known as "puddling" or hardening. After being dragged a few times while the earth is still in a moist or putty-like condition, the surface shows the hardening process very perceptibly, and the more often it is treated while in this condition the harder it becomes. A farmer in a western townsip declared to the writer that within four years he would have the surface of the road in front of his farm hard enough to resist the upheaving action of frost—but this seems too optimistic.

As to the sides of the road, care should be taken not to attempt to throw too much soil inward from the ditch side. One furrow's width in each season is probably enough, and care should be taken to keep this continually working to the crown. The success of this process of dragging depends largely on the road ditches being of proper depth and free to receive the water rapidly from the road surface and carry it away. But this, of course, is a requisite on all good roads.

The simplicity of this system of building up a road surface seems too good to be true, yet it has been a success wherever persistently tried through the Province from the Ottawa to the Detroit River, and the more clay there is in the soil, the more successful it has proven. As already mentioned (and I would emphasize it again) the necessities are good drainage and the carrying on of the work while the soil is slightly damp. Road-dragging under these conditions, carried on systematically and regularly through this Province, would provide a good road to any farmer's gate—the essential thing in any good road system which aims at general acceptance and continued approval.

The trouble so far with the log drag is that it has been mainly confined to the voluntary work done by a small portion of owners past whose farms the roads run. So far as the writer has learned, it has not yet been officially adopted as a part of the road-making system of this Province. The road drag will never benefit our country to its full possibilities until it has received the full official approval of the road-making authorities as an approved part of our road system. The great majority of our farmers will not leave their own farm work at intervals through the seasons to benefit the roads of the community. They feel like caring for their crops or their cattle before they do work on the roads for the public. This feeling must be removed by making the systematic use of the log drag a recognized part of our road system, and lifting it out of the voluntary class, that is, the voluntary and unrewarded effort of individuals.

The speaker is of opinion that in order to get good roads generally, it is advisable that the plan of Government aid should be shifted from a bonus for construction to a yearly allowance per mile for maintenance, subject to inspection at intervals by a proper officer—this allowance to be given the township or county authorities which maintain the roads or portions of them up to a designated

standard. I am inclined to think that this course will eventually have to be followed on the roads already built at high cost in order to insure their being kept in proper condition for travel. Sections of counties which have not drawn any help under the Highways Improvement Act, but which have gone on bridging and draining and grading their roads at their own cost, until now they are in a position to put the log drag into general use, should be given especial assistance under a maintenance grant. Such assistance, being only from year to year, would be especially effective in permanently keeping up the standard of good roads, because when any road would fall below the standard, the aid would be withheld.

The mileage of roadway which should be maintained in good travelling order in older Ontario would probably reach 30,000. A yearly grant of $10 or even less on all roads reaching an approved standard for the year (excepting, of course, when frost is going out or in exceptional seasons, such as violent snow or rain storms) would be sufficient to awaken an interest that would rapidly cause the betterment of all roads to a degree which we cannot now conceive.

In conclusion let me urge on all present to go home determined to press for the general use of the log drag on all roads, and especially on those which are used frequently. The use of the log drag will be the salvation of our road system, but to secure its general use, the work must be paid for. If the Government will help by grants for road maintenance, so much the better; but in any event the municipal councils should have this work systematically done either under contract, which is preferable, or under the statute labour system. To depend on voluntary effort will only be to have the work done in patches. (Applause.)

DISCUSSION.

BYRON ROBINSON, ESQ., WARDEN, COUNTY OF KENT.

Mr. Chairman and Gentlemen: I am glad to meet you this morning and to have the privilege of saying a few words on this important question of good roads. It has been discussed in all ways and in almost every way, and we have a number of what might be called road cranks in this country.

I am very sorry Mr. Irving is not here because he would be more capable of opening this discussion in a proper way than I am. I was pleased with the remarks made by Mr. Denholm; I have always backed him up in the County of Kent in anything he wanted to do in the way of improving the roads. Up to three or four years ago in the Counties of Essex and Kent, we had the worst clay roads in the Province of Ontario, but since we got the split-log drag, I think our roads have improved very fast and now compare very favourably with the roads in the eastern counties. The split-log drag must be used at the proper time and if you do so, you can make a good passable road; if you have a good clay bottom, you can make a good road cheaper with the split-log drag than you can with any other implement. The road must first be graded and drained and after that, if you use the split-log drag, that is all that is necessary. There is no use using the drag when the road is dry; it should be used after a rain. We have one roadmaster who is a crank on the road business and he has his men out scraping the road before it quits raining, and he has three or four miles of the finest road between London and Windsor on the lake shore. If you give the road a good dragging on a night before a heavy frost, you will have just as nice a pavement until it thaws out again as they have in the city where they have

asphalt pavements. After it thaws out, you should watch it and get at it again. Constant scraping puddles it, and makes it nearly as solid as cement. We have about a mile of road in the village of Whitley from the station, and we spend considerable money scraping that, and I do not think there is a road in the County of Kent or Essex that has more one-horse rigs on it and they do not even make a track in the centre of the road where the horses travel. The split-log drag is certainly the cheapest and the best way to make a good road on a clay bottom. If there is anything that would please the people up in the County of Kent, it would be for the Government to give something to help keep these roads in order by the use of the split-log drag.

THE CHAIRMAN: We have with us, I am happy to say, this morning, a gentleman who was President of the Associated Boards of Trade last year, and who is Honorary President this year, Col. Ponton, of Belleville, and also the President, Mr. A. J. Young.

ADDRESS

"VALUE OF ROADS TO CITIES AND TOWNS."

COL. W. N. PONTON, K.C., BELLEVILLE, HON. PRESIDENT ONTARIO ASSOCIATED BOARDS OF TRADE.

Mr. Chairman and Gentlemen:

Mr. A. J. Young and I are here to return the very cordial and practical greeting which we received from your President at our meeting of the Associated Boards of Trade in the City Hall. Your President came in at a most opportune time just after we had heard an inspiring address from Dr. Robertson, the Chairman of the Royal Commission on Education, and the Hon. George E. Foster. Then Mr. Vermilyea, your President, addressed us, and to show you how completely and satisfactorily he performed his duties, when the resolution on which he spoke, namely, that of "Good Roads" which we had on our agenda as one of the most important features, came up, there was an unanimous cry for the question and there was no discussion. Mr. Vermilyea had covered every point.

I have hope for the future, and Mr. Young shares that hope and wish, that these two great bodies, meeting as they do every year just about the same time, could be more intimately associated together and form a co-operative alliance, one supporting the other, because I feel we would be able to carry out a far more effective campaign in that way. I am glad to know that your Association stuck to the solution of this question in the face of some discouragement; now you are getting encouragement, and now is the proper time for action. They say there are only three days in which you can properly plough a clay farm, and that is the day you ought to have done it and the day before and the day after. Don't let us have it the day after the day we ought to do it. We ought to do it now. I am speaking as a citizen of a town and I am also speaking as a farmer. What I make in the city, I lose on the farm, and what I make on the farm I lose in the city, and I even things up in that way..

From the city's point of view, we fully realize that only by concerted action and the moulding of public opinion and the expression of public opinion, can we make our representatives in Parliament realize that there is a solidarity of

public opinion behind us on this question of the need for better roads. We want an organization of public spirit because that is, after all, the basis of organization. They should all combine together—the motor car owners, those who use motor cars for commercial purposes and those who use them for pleasure, the tourist and the traveller—they should all be considered, and if they all get together and have a clear objective, and work out their affairs together at the same time, just like a perfect machine with all the parts performing adequately their functions, we would get the best out of it and we would produce that which we desire in actual results.

What do we desire? From the city's and town's point of view, it is just exactly what you desire, and it has been expressed here this morning. The arteries —I want you to think of the road as a living organism; in everything there is something more than arteries, there are veins. Arteries would not be of any use if it were not for the veins. Besides the arteries and the veins there is the nerve power. I think a large municipality is a real nerve centre and everyone of you as you go to your homes can be a nerve centre and send a nervous energy going through this Province. What good would we be without our nerves? If you have your nerves operating right they build up the circulation and the buoyancy, and if we have a good circulation and nerves, we know we are living. We must make our representatives in Parliament conscious of the fact that we are living and working.

If you take the whole of the Province as a piece of cloth, the good roads will be the web and the warp and the woof of that piece of cloth, and on this piece of cloth we will say there should be some kind of pattern, and that is where we consider the little urban municipality to be. You are the main part of the cloth and we are the little pattern on the cloth, but the pattern must be consistent with the style of the cloth and it must help in producing the effect. If there must be a radiating centre out, then too there must be a magnetic centre in. There never was a wheel that was a wheel with only a tire; there never was a wheel that was only a felloe; there never was a wheel that consisted only of spokes; there must be a hub, spokes, felloe and tire. I am afraid you will think the longer the spoke, the greater the tire. (Laughter). If we consider it as just part of one wheel, where is the centre? Where your municipality is, that is the centre to you—many centres if you like, but all radiating out. We have any amount of stars up there, but they all go their own way; each one is a unit, and each one of you is a unit, and each municipality is a unit, and if you keep working for the same good thing and for the same object, you will have a perfect organization controlled just as much as the firmanent above is controlled. You must have concerted work and there must be no favoritism with regard to one part more than another part. We are units in an orbit.

We consumers in the city want the producer, and we want them to bring their produce to the market when it is fresh, and we want it in large quantities. Our markets are the very essence of our life, the essence of our life not merely because we buy produce there but because men and women who come to the markets trade in our towns. The oftener you come and the oftener business relationships are established, the better it is for the trade and commerce of the town.

Good roads ought to be in the town itself. I have one place in view where we have very fair roads—outside of the City of Belleville, in the County of Hastings, but when you come within the limits of the City of Belleville, I am

sorry to confess they are not as good as they should be, and our agricultural friends when they come to visit us are not in as good humour as they were when within a mile of our city. The Irish have a peculiar way of expressing themselves; one of them writing to a nobleman said, "I hope, my lord, if you ever come within a mile of my place, you will *stay there* all night." That is the invitation some cities hold out: if you ever come within a mile of them you will stay there all night. We mean well, but our meanings ought to be put into actions and we ought to have good roads to welcome our neighbours from the county. "Her ways are ways of pleasantness." And our good roads, both in suburbs and city, should be well-lighted roads.

I am a believer too in the doctrine that cities and towns should contribute to good roads in their vicinity and outside their limits. What is the limit? It is only a formal geographical thing and the limits of a progressive city are anywhere; it is simply the limit of its touch and its reach. What is the limit of a city or town? With good roads, there are no such things as limits, and surely the cities are interested in you and in having you come there to meet together and do your trading. You come in well loaded and go out well loaded, but we don't want you merely for material purposes alone. Who in the city and in the Legislature and in the Dominion Parliament are the stay and backbone of the city? It is the men who have come from the country. Two-thirds of the members of Parliament have come from the country. We want you for intellectual purposes, social purposes, church and educational purposes. It is not merely to trade, although the more good roads we have, the more we draw near to that ideal of man-to-man barter and exchange, value for value. I think the city has something to offer to the men in the rural district in the way of value in addition to the more superficial inducements or commercial attractions. We have something of life there, the aggregating together, and we ask you to come and join us and share with us, as we with you.

I am speaking as if I were a city man speaking to representatives of the country districts. I understand the great majority of you are from the County Councils. There is another thing about good roads in connection with the city or town, and that is this, that while I think the cities and towns should pay for part of the suburban roads, I think also, of course, it is only fair that the cities should share if there is a grant of money given: I believe a Dominion grant will be given, within twelve months from now, because we have got to make these politicians understand that this is a question that affects *the people* and is one that cannot be made a political football of, and one of which neither side dare make a political football. (Applause.) We are not going to allow that kind of political diplomacy to play on us as if we were a musical instrument on which they could produce discords and not concords. We must let them understand that we are in earnest in this matter. When we get that grant, it must be distributed in an equitable way. The cities and towns must be brought into touch with the suburbs in order that slums may be abolished and in order that the working people and the poor may be able to get out and have their little home and little garden, and this can only be done by having proper means of transportation. If we have good roads so that men and women can get quickly to their work and back to their homes again, it will be a great benefit. There is nothing beautiful that is not true, and there is nothing true that is not valuable. Burns' description of a despondent man was:

"A man who bore a galling load,
Over a rough and weary road."

Yes, that is associated with everything that is despondent to us and we should lift that load, for the cities and towns are interested just as much as the country. From the military point of view, also, we cannot ignore it. We in this old British Province of Ontario do not ignore it. Do you know that they have given the greatest attention to see in what standard condition the roads are, and they have calculated down to the most minute point exactly how long it would take for an army on the defensive to organize itself with good roads as compared with how long it would take and the millions it would cost to organize an army with bad roads? Our motto is "Defence," not "Defiance." It would be of immense value from a military point of view to have good roads. Some people think that military organization means destruction; I regard military organization as construction. I regard these cadet corps of ours as something that will do our boys good; they will swing along with an elastic step together and form a "brotherhood of solidarity." "Give me where I can stand and I can move the world," said the old philosopher; and Robert Louis Stevenson wrote: "All I ask is the heaven above and a road beneath me." Yes, but it must be a real road that will hold him up and give him impulse onwards.

The finest speech Queen Victoria made was to her Royal Engineers, and she was a model wife and mother. If you can get your mothers and wives interested in this campaign for good roads, it will have a wonderful effect on your members of Parliament. When Queen Victoria addressed her Royal Engineers when she was sending them to British Columbia, she said, "Go out, my Royal Engineers and my soldiers, not to destroy cities but to create them; not to destroy bridges but to construct them; not to destroy houses, but to build them, and generations yet unborn will live to bless the memory of my Royal Engineers as they occupy these cities that you have built and as they pass over the bridges that you have constructed and drive along the roads that you have made and will have founded another England on the shores of the Pacific." Her words came true, and we have wonderful places in British Columbia that were originally constructed by the Royal Engineers.

We are wasting millions every year in the country and in the cities on the roads because every bit of unproductive expenditure and every bit of unnecessary energy that is expended is waste. We have so much energy to spend, and we must spend it profitably, and I tell you the man who clears away the obstacles and makes a good highway is doing a public work and a work that will be of great benefit to mankind and will lessen this waste of unproductive energy. Just think of the vital human and animal energy that is expended in hauling loads over the poor roads in cities and towns and in country districts!

Hotel-keepers in the cities and towns should contribute towards good roads because a material part of their income comes from tourists and travellers. The Hotel Quinte, in Belleville, is the Mecca of motorists and tourists. A good hotel is an asset to any town and these hotels should contribute thousands of dollars to good roads because they are making a large profit out of the tourists who use these roads, yet pay little for their maintenance. There is nothing that will appeal to the taxpayer so much and make him a willing taxpayer as good roads. If you give the people a concrete example of the actual results of the taxes, they are quite willing to pay, and I think the motorists would be quite glad and willing to pay a tax if they were satisfied that the money was going directly towards building good roads. If you show them the results of the money they are contributing, they will not object to paying. There will be no "impatience of taxation" which even municipal legislators dread.

It would of course not be treating you with proper respect were I to *apologize* to you for reading just a few verses as I close, because these lines originated in the mind of one who had a vision and who saw the future, and we have to go to men and women of ideas and ideals sometimes to get our inspiration. I found these verses the other day and I thought they were wonderful, for they express the idea that I desire to give you in creative words that I could not use myself. I will now close by reading you these verses and I thank you cordially for your attentive hearing.

SONG OF THE GOOD ROAD.

I am a Road; a good road, fair and smooth and broad;
And I link with my beautiful tether
Town and country together,
Like a ribbon rolled on the earth from the reel of God.
Oh, great the life of a road.

I am a Road; a long road, leading on and on;
And I cry to the world to follow
Past meadow and hill and hollow,
Through desolate night to the open gates of dawn,
Oh, bold the life of a road.

I am a Road; a kind road, shaped by strong hands,
I make strange cities neighbours;
The poor grow rich with my labours,
And beauty and comfort follow me through the lands.
Oh, glad the life of a road.

I am a Road; a wise road, knowing all men's ways;
And I know how each heart reaches
For the things dear Nature teaches;
And I am the path that leads into green young Mays,
Oh, sweet the life of a road.

I am a Road; and I speed away from the slums,
Away from desolate places,
Away from unused spaces;
Wherever I go, there order from chaos comes,
Oh, brave the life of a road.

I am a Road; and I would make the whole world one.
I would give hope to duty,
And cover the earth with beauty.
Do you not see, oh, men! how all this might be done?
So vast the power of the road.

ADDRESS

A. YOUNG, ESQ., PRESIDENT ASSOCIATED BOARDS OF TRADE.

Mr. President and Gentlemen:

I am sure I am very greatly honoured by being requested to make a few remarks to this Good Roads Association. I was honoured yesterday by being elected President of the Associated Boards of Trade of the Province of Ontario. The Associate Boards of Trade draw their membership more from the cities. men who are living by buying and disposing of the produce that is brought from the country. Good roads are a vital question to the commercial men of the Province

of Ontario. We have a membership of 69 Boards of Trade of the cities and towns of the Province; our membership embraces about 11,000 and we are absolutely non-partisan. We assemble together each year and we discuss the various problems that are brought before us from a non-partisan point of view and solely from the point of view of what is going to be of benefit to the Province of Ontario. You are doing the same thing in your organization. We are both working along similar lines; you are working to better the arteries and the veins leading from the country to the cities and towns and we are endeavouring in any way we can to help you along with your good work.

I will not detain you further but thank you for the privilege of having this opportunity of saying these few words to you. If the Associated Boards of Trade can assist you in any of your enterprises, you have only to call on us and we will only be too happy to help you out in any way we can.

THE CHAIRMAN: I am sure we are all delighted to have Col. Ponton and Mr. Young here this afternoon. I have been your President for the last year; another man whom I respect very highly has been chosen for President for the incoming year. I want to say to you how much I appreciate the indulgence you have shown me during the year and the kindness with which you have borne with my personal weaknesses. I shall always have the pleasantest recollections not only of the members generally of this Association and of the gentlemen who constituted the Executive during the past year, but I shall always cherish the memory of the men who have been working with me in this great work, who have worked hand in hand without partisanship, without prejudice, seeking for the betterment of the roads of the Province of Ontario.

I have now pleasure in asking Mr. Sanderson to take the chair and finish the rest of the programme.

MR. J. A. SANDERSON, PRESIDENT ELECT, in the Chair:

Gentlemen: I can assure you it would be impossible for me to find words to express my thanks to my good friend, Mr. Vermilyea, for the kind words he has said about me. I only hope and trust that we may work together and keep alive the interest that has always characterized this Good Roads Association. Some of us feel that possibly we have attained our ends and that the time has come when we are within reach of what we have been working for, but I feel that we yet have work to do on this road problem and that this Association will still have many things to occupy its attention. I know from the character of the men I have met at these meetings for the last number of years and from the men I have met on the Executive and our good friends, Major Kennedy and Mr. Vermilyea, that we will be able to keep alive and that, notwithstanding any shortcomings I may have, the Association will keep on advancing in the good work. I feel sure that everything will go along in a smooth way.

Thanking you for the honour of being elected President of this Association, I will not further occupy your time as I feel it would not be fair at this late hour I will ask for the Auditors' Report.

FINANCIAL STATEMENT, 1913-1914.

Receipts.

Balance on hand	$473 76
City of Toronto	15 00
Sundries	21 00
County of Hastings	15 00
County of Haldimand	15 00
County of Elgin	15 00
County of Perth	15 00
County of Prescott and Russell	15 00
County of Northumberland and Durham	15 00
County of Kent	15 00
County of Welland	15 00
County of Norfolk	15 00
Interest	5 81
T. H. Thompson	1 00
S. L. Squire	1 00
County of York	15 00
County of Wentworth	15 00
Township of York	5 00
Village of Winchester	5 00
County of Waterloo	15 00
County of Peel	15 00
County of Simcoe	15 00
County of Lennox and Addington	15 00
Outstanding cheque	2 60
Balance from Ottawa trip	5 20
	$760 37

Disbursements.

Expenses of President and Executive Committee	$424 85
Printing and Stationery	24 90
Reporting Convention, 1913	60 00
Balance in bank	250 62
	$760 37

Audited and found correct.

(Sgd.) A. M. CHAPMAN,
(Sgd.) W. E. TUMMON. } *Auditors.*

Toronto, February 26th, 1914.

Moved by Mr. Timms, seconded by Mr. Pugsley, that the Auditors' Report be received and adopted. Carried.

ADDRESS.

Major T. L. Kennedy, Dixie.

Mr. President and Gentlemen:

I intended getting a copy of Mr. Thompson's paper and discussing the points, but as I did not get the paper I was unable to do so. I am sorry Mr. Thompson was not here to give his paper because he is well qualified to speak on the subject.

I live on a farm and draw a lot of stuff by wagon into the City of Toronto. Originally I had a 100 acre farm and a 200 acre farm, and we used to sell from $2,000 to $3,000 worth of stuff off these farms, but now we have a 15 acre farm and we send into the City of Toronto between $12,000 and $13,000 worth of produce and our greatest assistance in doing that has been good roads. Formerly 40 bushels of potatoes was a good load, but now we can put on 60 and where we would take a full day for a trip, we can now do it in half a day and our horses come home fresh. We can make six trips a week, and formerly three was our limit.

The people who get the benefit of the good roads are the automobilists, the people in the cities and the farmers. At a meeting of the Highway Commission in the Parliament Buildings, I heard the President of the Ontario Motor League say that these people were partners. He is right: the farmer pays for the building of the road and the automobilist wears it out. That kind of partnership cannot exist much longer, and I do not think it will exist much longer after this session of the House is over. I believe the high cost of living, to a great extent, is caused by poor roads. In the spring and fall when the roads are bad the farmer has a lot of milk, but instead of making butter he feeds his calves, and instead of hauling his produce into town, he says, "The roads are too bad and I cannot go to town to-day." Instead of taking his butter and milk and eggs to town he uses them at home and the people in town have to go without them. If you look in the paper in March and April you will read reports from places like Chatham: "No market to-day; roads bad," and then after that you will see a heavy market when the roads become good and all the farmers come in. That is a condition of affairs that exists all over Ontario, and until such time as good roads are built, that will continue to exist. When we get good roads I think it will be one great step in reducing the high cost of living.

ONTARIO

Highway Legislation

Compiled under the Direction of the Commissioner of Highways, and Appended to his Annual Report on Highway Improvement, 1914.

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To the Honourable J. O. REAUME, *Minister of Public Works.*

SIR,—I have the honour to transmit to you for publication a compilation of Ontario Highway Laws, as an appendix to the Annual Report of this Office.

I have the honour to be,

Sir,

Your obedient servant,

W. A. MCLEAN,
Commissioner of Highways.

PARLIAMENT BUILDINGS, TORONTO,
17th April, 1914.

ONTARIO

HIGHWAY LEGISLATION

Office compilation

W. A. McLEAN, C.E., Commissioner of Highways.

Control of public roads in Ontario was originally vested in the Crown, or Provincial Government, but responsibility has been conveyed to city, town, village, township and county corporations, principally by the general Municipal Act of the Province.

The Municipal Act defines the procedure whereby municipalities are created, and fixes their powers. Under this Act, townships are given control of all roads within their borders; except such roads as lie within towns, villages or cities situated within the township; in which case each urban municipality is in turn responsible for the roads within its boundaries.

Expenditure for road improvement is met by direct taxation in each local municipality under the Assessment Act. Townships, in addition, may employ statute labour ("labour tax"); and counties have the privilege of assuming a system of main roads, to which the Province contributes one-third of the expenditure on construction.

Townships throughout the Province have been surveyed on rectangular systems, and road allowances, generally 66 feet wide, are fixed along straight lines. In Southern Ontario these lines have been closely followed in construction, but in Northern Ontario, while adhered to where practicable, there is necessarily greater divergence owing to the rocky and broken character of the country.

Township organization may be procured in unorganized territory where there is a population of not less than 100. Villages, to obtain separate incorporation from the township in which they lie, must have a population exceeding 750; a village having a population of not less than 2,000 may become a town; and a town having a population of not less than 15,000 may become a city.

Members of municipal councils are elected annually by secret ballot. The council of a village or township consists of a reeve, and four councillors. The council of a town having a population not exceeding 5,000 is composed of a mayor, reeve, deputy reeves, and councillors in proportion to wards and population. The council of a city is composed of a mayor, members of a Board of Control (if the city has such a Board) and aldermen proportioned to the population or wards. A county is formed of a group of townships, and the council is composed of the reeves and deputy reeves of the townships, towns and villages within the county.

The general Municipal Act provides for the election of municipal councils, fixes their powers, and defines procedure in connection with their several functions.

The more important provincial statutes relating to Highways are as follows:

1. Highway Section of the Municipal Act, R.S.O. 1914, c. 192, parts xx, xxi.
2. The Local Improvement Act. R.S.O. 1914, c. 193.
3. The Statute Labour Act. R.S.O.1914, c. 196.
4. The Highway Improvement Act. R.S.O. 1914 c. 40.
5. The Colonization Roads Act. R.S.O. 1914, c. 41.
6. The Highway Travel Act. R.S.O. 1914, c. 206.
7. The Motor Vehicles Act. R.S.O. 1914, c. 207.
8. The Snow Roads Act. R.S.O. 1914, c. 208.
9. The Tolls Exemption Act. R.S.O. 1914, c. 209.
10. The Toll Roads Act. R.S.O. 1914, c. 210.
11. The Snow Fences Act. R.S.O. 1914, c. 211.
12. The Traction Engines Act. R.S.O. 1914, c. 212.
13. The Tree Planting Act. R.S.O. 1914, c. 213.

The several Acts enumerated are appended hereto, with the exception of the Toll Roads and Tolls Exemption Acts. The latter are omitted as there are now only 100 miles of toll road in the Province, and the application of these Acts therefore is very limited.

Special attention is drawn to the Local Improvement Act under which townships are now empowered to conduct road improvement in the same way as towns and cities, assessing the cost on the property benefited. Under this method the township council is authorized to pay a portion of the cost of the work, and payment of the balance levied on the property may be distributed over a term of years.

THE MUNICIPAL ACT.

R.S.O. 1914, c. 192

OFFICE COMPILATION OF PROVISIONS RESPECTING HIGHWAYS.

Interpretation. "Arbitration."

2. (*a*) "Arbitration" shall mean an arbitration under the provisions of this Act.

"Bridge."

(*b*) "Bridge" shall mean a public bridge, and shall include a bridge forming part of a highway or on, over or across which a highway passes.

"City," "town," "village," "township," "county."

(*c*) "City," "town," "village," "township," and "county" shall respectively mean city, town, village, township or county, the inhabitants of which are a body corporate within the meaning and for the purposes of this Act.

"Highway."

(*e*) "Highway," shall mean a common and public highway, and shall include a street and a bridge forming part of a highway, or on, over or across which a highway passes.

"Local municipality."

(*g*) "Local municipality" shall mean a city, a town, a village and a township.

"Municipal Board."

(*j*) "Municipal Board" shall mean Ontario Railway and Municipal Board.

(*l*) "Municipality" shall mean a locality, the inhabitants of which are incorporated. "Municipality."

(*p*) "Separated town" shall mean town separated for municipal purposes from the county in which it is situate. "Separated town."

(*q*) "Supreme Court" shall mean Supreme Court of Ontario. "Supreme Court."

(*r*) "Township" shall include a union of townships, and a municipality composed of two or more townships. "Township."

(*t*) "Unorganized territory" shall mean that part of Ontario without county organization. "Unorganized territory."

(*u*) "Urban municipality" shall mean and include a city, a town, and a village. 3-4 Geo. V. c. 43, s. 2. "Urban municipality."

PART XX.

398. By-laws may be passed by the councils of all municipalities.

Drainage.

7. For constructing, maintaining, improving, repairing, widening, altering, diverting and stopping up drains, sewers or water-courses; providing an outlet for a sewer or establishing works or basins for the interception or purification of sewage; making all necessary connections therewith, and acquiring land in or adjacent to the municipality for any of such purposes. Construction of drains, sewers, sewage-disposal works, etc.

Driving or Riding on Roads and Bridges.

8. For regulating the driving of horses or cattle and the riding of horses on highways and bridges. Regulating driving on roads and bridges.

9. For prohibiting racing, immoderate or dangerous driving or riding on highways and bridges. Prohibiting racing on highways.

See section 404, par. 3. as to setting apart streets in cities of 100,000 population for fast driving.

Flooding—Prevention of.

16. For the purpose of preventing damage to any highway or bridge or to any property within the municipality by floods arising from the overflowing or damming back of a river, stream or creek flowing through or in the neighbourhood of the municipality, for acquiring land in the municipality or in any adjoining or neighbouring municipality, and for constructing such works as may be deemed necessary for that purpose, and for deepening, widening, straightening, or otherwise improving such river, stream or creek in the land so acquired, or removing from it islands, rocks or other natural obstructions to the free flow of the water. Works for prevention of damage by flooding.

Municipal Officers.

Appointing certain officers.

29. For appointing such pound-keepers, road commissioners, path-masters, fence-viewers, overseers of highways, road surveyors, inspectors of sheep worried or killed by dogs, and other officers in addition to those specially mentioned in this Act and such servants as may be deemed necessary for the purposes of the corporation, or for carrying into effect the provisions of any Act of this Legislature or by-law of the council.

Fixing fees, duties and security of.

30. For fixing their remuneration and prescribing their duties, and the security to be given for the performance of them.

Public Parks and Drives.

Acquiring land for parks, etc.

32. For acquiring land for and establishing and laying out public parks, squares, avenues, boulevards and drives in the municipality or in any adjoining local municipality, and where there is no Board of Park Management for exercising all or any of the powers which are by *The Public Parks Act* conferred on Board of Park Management.

Rev. Stat. c. 203.

Sidewalks, etc.—Vehicles on.

Prohibiting vehicles on sidewalks, etc.

37. For prohibiting carriages, wagons, bicycles, sleighs and other vehicles and conveyances of every description, and whatever the motive power, or any particular kind or class of such vehicles or conveyances being upon, or being used, drawn, hauled or propelled along or upon any sidewalk, pathway or footpath used by or set apart for the use of pedestrains, and forming part of any highway or bridge, boulevard or other means of public communication, or being in or upon any highway, boulevard, park, park-plot, garden or other place set apart for ornament or embellishment or for public recreation.

Watering Streets.

Contracts with street railway companies for street watering.

40. For contracting with a street railway company for watering any of the highways for any number of years, not exceeding five, and for renewing such contract from time to time for a period not exceeding five years. 3-4 Geo. V. c. 43, s. 398.

399. By-laws may be passed by the councils of local municipalities.

Electricity—Transmission of.

Laying of pipes or conduits on streets. Rev. Stat. c.197.

17. Subject to *The Municipal Franchise Act* for authorizing any person supplying electricity for light, heat and power, to lay down pipes or conduits for enclosing wires for the transmission of electricity under the highways or public squares, or to carry wires for the transmission of electricity or to erect telegraph, and telephone poles and wires across or along any highway or public square, on such terms and conditions as the council may deem expedient.

Transmission of electricity.

(*a*) A by-law shall not be passed under this paragraph in violation of any agreement of the corporation.

Fences.

29. For prescribing the height and description of, and the manner of maintaining, keeping up and laying down fences along highways or parts thereof; and for making compensation for the increased expenses, if any, to persons required so to maintain, keep up or lay down any such fence. Along highways.

31. For requiring proper and sufficient protection against injury to persons or animals by fences constructed wholly or partly of barbed wire or any other barbed material to be provided by the owner of the land; and in towns and cities for prohibiting the erection along the highways of fences made wholly or partly of barbed wire or any other barbed material. Barbed wire fences.

Poles and Wires.

50. Subject to *The Municipal Franchises Act* for regulating the erection and maintenance of electric light, power, telegraph and telephone poles and wires and poles and wires for the transmission of electricity upon the highways or elsewhere within the municipality. Electric light, etc., poles and wires. Rev. Stat. c. 197.

51. Subject to *The Power Commission Act* for constructing or laying down pipes or conduits for enclosing wires for the transmission of electricity under, or for erecting towers or poles for the support of wires for such purpose across or along any highway or public place, and for entering into agreements with electric light or power, telegraph or telephone companies for the use by them of such pipes, conduits or poles, for such consideration and on such terms and conditions as may be agreed upon. By-laws for laying pipes or conduits for electric wires. Rev. Stat. c. 39.

Snow and Ice—Removal of.

61. For requiring the occupants of buildings adjoining a highway in the municipality of in any defined area of it to clear away and remove the snow and ice from the roofs of such buildings and from the sidewalks adjoining their premises, and for regulating the times when and the manner in which the same shall be done. Clearing away snow and ice from roofs and sidewalks.

62. For clearing away and removing snow and ice from the roofs of unoccupied buildings adjoining a highway and from the sidewalks adjoining the premises and adjoining vacant land in the municipality or in any defined area of it at the expense of the owner and for collecting or recovering the expenses incurred in so doing in the manner provided by section 500. Case of unoccupied buildings and vacant land.

Steam Transmission.

64. For authorizing any person supplying steam for heat or power to lay down pipes or conduits for transmitting steam under the highways or public squares on such terms and conditions as the council may deem expedient. Transmitting steam under highways.

(*a*) A by-law shall not be passed under the authority of this paragraph in violation of any agreement of the corporation.

Watercourses and Drains—Obstruction of.

Obstruction of drains.

67. For prohibiting the obstruction of any drain or watercourse, and for permitting and regulating the size and mode of construction of culverts and bridges which cross any drain or watercourse situate on a public highway.

Weeds.

Prevention of growth of thistles and weeds. Appointment of inspector to enforce by-law.

69. For prohibiting the growth of Canada thistles and other weeds detrimental to husbandry and for compelling the destruction thereof; for appointing an inspector to enforce the by-law, and for prescribing his duties and fixing his remuneration.

400. By-laws may be passed by the councils of urban municipalities.

Cab Stands and Booths.

Cab stands.

5. For authorizing and assigning stands on the highways and in public places for vehicles kept for hire; and for authorizing the erection and maintenance of covered stands or booths on the highways and in public places, for the protection or shelter of the drivers of such vehicles.

(*a*) No such covered stand or booth shall be placed upon the sidewalk without the consent of the owner and occupant of the adjoining land.

Cellars—Plans of.

Ascertaining levels of cellars, etc.

6. For requiring owners and occupants to furnish the council with the levels, with reference to a line fixed by by-law, of their cellars heretofore or hereafter dug or constructed, and for taking such other means as may be deemed necessary for ascertaining such levels.

Compelling the furnishing of ground or block plan of buildings to be erected.

7. For requiring to be deposited with an officer named in the by-law, before the erection of a building is commenced, a ground or block plan of the building, with the levels of the cellars and basements, with reference to a line fixed by by-law.

Children Riding behind Vehicles.

Prohibiting children from riding behind wagons, etc.

8. For prohibiting children from riding on the platforms of cars, or riding behind or getting on wagons, sleighs or other vehicles while in motion, and for preventing accidents arising from such causes.

Coasting and Tobogganing.

Coasting and tobogganing.

9. For prohibiting or regulating coasting or tobogganing on the highways.

Drainage Purposes—Acquiring Land in Another Municipality for.

10. For acquiring, with the consent of the council thereof, land in any other municipality required for preventing such urban municipality or any part of it from being flooded by surface or other water flowing from such other municipality or for an outlet for such water; and for constructing, maintaining and improving drains, sewers and water-courses in the land so acquired.

Acquiring land in another municipality for drainage purposes.

Fire Engines, etc.—Right of Way on Highways.

13. For providing that the reels, engines and vehicles of the Fire Department shall have the right of way on the streets and highways while proceeding to a fire or answering a fire alarm call.

Right of way on streets for fire reels.

Naming and Surveying Streets.

38. To provide for surveying, settling and marking the boundary lines of highways and giving names to them or changing their names, and for affixing the names at the corners thereof on public or private property:

Marking the boundaries of and naming streets, etc.

(*a*) A by-law for changing the name of a highway shall not have any force or effect unless passed by a vote of at least three-fourths of all the members of the council, or until a copy of it certified under the hand of the clerk and the seal of the corporation has been registered in the registry office of the proper registry division.

Proceedings for changing names of streets.

(*b*) A by-law for changing the name of a highway in a city or town shall state the reason for the change, and shall not be finally passed until it has been approved by a Judge of the County or District Court of the County or District in which the municipality is situate.

(*c*) The Judge, on the application of the council, shall appoint a day, hour and place for considering the by-law, and for hearing those advocating and opposing the change.

(*d*) A copy of the by-law and of the appointment shall be served on the registrar of the registry division in which the municipality is situate at least two weeks before the time appointed, and a notice of the application in such form as the Judge may approve shall be published once in the *Ontario Gazette* at least two weeks before the time so appointed, and at least once a week for four successive weeks in such other newspaper or newspapers as the Judge may direct.

(*e*) If the Judge approves of the change he shall so certify, and his certificate shall be registered with the by-law, and the change shall take effect from the date of the registration.

Numbering Houses and Lots.

Numbering houses, etc.

39. For numbering the buildings and lots along the highways and for affixing numbers to the buildings, and for charging the owner or occupant with the expense incident to the numbering of his building or lot.

(*a*) Such expense may be collected in the same manner as taxes, and if paid by the occupant, subject to any agreement between him and the owner, may be deducted from the rent payable to the owner.

Numbers and Record of Streets.

Record of streets, numbers, etc.

40. For keeping (and every such council shall keep) a record of the highways and of the numbers of the buildings and lots, and for entering therein (and every such council is hereby required to enter therein) a division of the streets with boundaries and distances for public inspection.

Pits and Quarries.

Pits and quarries.

41. For prohibiting the making of pits and quarries in the municipality or regulating the location of them.

(*a*) The making or locating of a pit or quarry in contravention of the by-law in addition to any other remedy may be restrained by action at the instance of the corporation.

Sidewalks—Horses and Cattle upon.

Driving, etc., upon sidewalks.

44. For prohibiting the leading, riding or driving of horses or cattle upon sidewalks or in other places not proper therefor.

Spitting on Sidewalks, etc.

Spitting on sidewalks, public buildings, etc.

46. For prohibiting spitting on sidewalks and pavements, and in the passages and stairways of and entrances to public buildings, and in buildings, halls, rooms and places to which the public resort, in street cars and public conveyances, and in such other public places as may be designated in the by-law.

Traffic on Highways, etc.. Driving of Cattle, etc.

Regulating traffic on streets and width of wheels.

49. For regulating traffic in the highways and the width of the tires and wheels of all vehicles used for the conveyances of articles of burden, goods, wares or merchandise: and for prohibiting heavy traffic and the use of traction engines and the driving of cattle, sheep, pigs and other animals in certain highways and public places named

in the by-law, and for prohibiting traffic in any but one direction in highways which in the opinion of the council are too narrow for the passing of one vehicle by another.

Markets, etc.

401. Subject to the next succeeding section by-laws may be passed by the councils of urban municipalities. Market by-laws.

2. For prohibiting or regulating the sale by retail in the highways or on vacant lots adjacent to them of any meat, vegetables, grain, hay, fruit, beverages, smallwares and other articles, and for regulating traffic in and preventing the blocking up of the highways by vehicles or otherwise. Regulating vending in streets, etc.

4. For prohibiting criers and vendors of smallwares from practising their calling in the market place, or on the highways, or on vacant lots adjacent to the market place or to a highway. Criers and vendors of smallwares.

9. For regulating vehicles, vessels, and other things in which anything is exposed for sale or marketed and for imposing a reasonable duty thereon, and establishing the mode in which it shall be paid. Regulating vehicles used in market vending.

406. By-laws may be passed by the councils of cities and towns.

Bicycles, etc.

1. For regulating the use on the highways of bicycles and other vehicles not drawn by horses, but not including motor vehicles. Regulating use of bicycles on highways.

Residential Streets and Building Line.

10. For declaring any highway or part of a highway to be a residential street, and for prescribing the distance from the line of the street in front of it at which no building on a residential street may be erected or placed. Setting apart residential streets. Fixing building line.

(*a*) It shall not be necessary that the distance shall be the same on all parts of the same street.

(*b*) The by-law shall not be passed except by a vote of two-thirds of all the members of the council.

406*a*. By laws may be passed by the council of cities having a population of not less than 200,000.

1. (*a*) Requiring all residents in the municipality owning and using any wheeled vehicle to obtain a license therefor before using the same upon any highway of the city. Licensing users of wheeled vehicles.

(*b*) Regulating the issuing of such licenses and the collection of fees therefor.

(*c*) Fixing an annual fee not exceeding $1.00 for such licenses, which shall be approved of by the Ontario Railway and Municipal Board.

(*d*) Fixing a scale of fees for different vehicles.

(*e*) Imposing penalties not exceeding $5.00 exclusive of costs upon all persons who contravene any such by-law.

(*f*) Providing that such penalties may be recoverable in the same manner as penalties for breach of any by-law under The Municipal Act.

Case of building encroaching on highway.

2. For allowing any person owning or occupying any building or other erection which by inadvertence has been wholly or partially erected upon any highway to maintain and use such erection thereon and for fixing such annual fee or charge as the council may deem reasonable for such owner or occupant to pay for such privilege.

(*a*) Such fee or charge shall form a charge upon the land used in connection therewith and shall be payable and payment of it may be enforced in like manner as taxes are payable and the payment of them may be enforced, but nothing herein contained shall affect or limit the liability of the municipality for all damages sustained by any person by reason of any such erection upon any highway.

Use of highway or boulevards for building purposes.

3. (*a*) For permitting the use of a portion of any highway or boulevard by the owner or occupant of land adjoining such highway or boulevard during building operations upon such land for the storage of materials for such buildings or for the erection of boardings.

(*b*) To fix a fee or charge for such use according to the area occupied and the length of time of such occupation and to collect the same.

(*c*) To regulate the placing of such materials or hoardings, the restoration of such highway or boulevard to its original condition, the payment of such fee or charge, and the giving of permits for such privilege.

4. For licensing and regulating the owners of public garages, and for fixing the fees for such licenses, and for imposing penalties for breached of such by-law and for the collection thereof.

(*a*) For the purpose of this paragraph, a public garage shall include a garage where motor care are hired or kept or used for hire, or where such cars or gasolene, oils, or other accessories are stored or kept for sale. 4 Geo. V., c. 33, s. 13.

407. By-laws may be passed by the councils of towns and villages.

Vehicles Used for Hire, etc.—Livery and Boarding Stables

2. For licensing, regulating and governing teamsters, carters and dray men, drivers of cabs and other vehicles for hire, and regulating the charges for the conveyance of goods or for other services by them. Licensing, etc., teamsters, etc.

3. For licensing, regulating and governing the keepers of livery stables, and of horses and cabs, carriages, omnibuses and other vehicles used or kept for hire: for regulating the fares to be charged for the conveyance of goods or passengers, and for enforcing payment thereof: Licensing livery stables, cabs, etc.

4. For defining districts within which a livery or boarding stable shall not be established. Prohibited areas.

408. By-laws may be passed by the councils of counties.

Fences.

2. For the exercise in respect of fences along highways under the jurisdiction of the council, of the powers conferred upon the councils of local municipalities by paragraph 29 of section 399 and by *The Snow Fences Act.* Fences.

Guaranteeing Debentures.

3. For guaranteeing debentures of any local municipality in the county. Guaranteeing debentures.

Poles and Wires.

4. Subject to *The Municipal Franchises Act for* permitting and regulating the erection and maintenance of electric light, power, telegraph and telephone poles, towers and wires on, and the laying of pipes or conduits for the conveyance of water, gas or sewage under, the highways, under the jurisdiction of the council. Regulating erection of poles, towers, wires, etc. on county roads.

Traffic—Regulation of; Licensing Livery Stables, etc.

6. If there are gravel or macademized highways under the jurisdiction of the council, and under its immediate control, which are being kept up and repaired by municipal taxation, and upon which no toll is collected; Regulation of traffic on certain county roads.

(*a*) For licensing, regulating and governing the keepers of livery stables, and of horses, cabs, carriages, omnibuses and other vehicles used or kept for hire, and teamsters; Licensing livery stables.

(*b*) For regulating the fares to be charged for the conveyance of goods or passengers; Rates of fare.

Tires.

(*c*) For regulating the traffic on such highways and the width of the tires on the wheels of vehicles used for the conveyance of articles of burden, goods, wares, or merchandise on such highways; and

Lock shoes.

(*d*) For regulating the use of lock shoes on vehicles used on such highways. 3-4 Geo. V. c. 43, s. 408.

409. By-laws may be passed by the councils of cities.

Sidelights on Vehicles.

Vehicles to carry side lights at night.

3. For requiring all vehicles using the public streets after dusk and before dawn to carry lighted side lights plainly visible from in front of and from behind such vehicles.

410. By-laws may be passed by councils of cities having a population of not less than 100,000.

Speedways.

Setting apart streets for fast driving.

3. For setting apart one or more highways on which horses may be ridden or driven more rapidly than is permitted upon other highways, and for regulating the use for such purpose of any such highway.

(*a*) If a majority of the property owners on any such street petition against such by-law, it shall be repealed.

411. By-laws may be passed by the councils of townships.

Portable Steam Engines.

Portable steam engines.

2. For prescribing the distance from a highway within which unenclosed portable steam engines may not be used for running a sawmill or a shingle mill.

Sleighing—Keeping Open Highways During Season of.

Keeping roads open in winter.

3. For providing for keeping open the highways during the season of sleighing in each year; and for the application of so much of the commutation of the Statute Labour Fund, as may be necessary for that purpose.

Requiring overseers of highways to keep open highways.

4. For requiring the overseers of highways or the path-masters to make and keep open the highways during the season of sleighing.

Powers.

(*a*) Such overseers and pathmasters may require the persons liable to perform statute labour to assist in keeping open such highways, and shall give to any person so employed a certificate of his having performed statute labour and of the number of days' work done, for which he shall be allowed on his next season's statute labour.

Naming Streets and Numbering Houses.

8. In the case of townships bordering on cities having a population of not less than 50,000, for naming and changing the names of, and surveying streets and for numbering houses and lots under and in conformity with paragraphs 38 and 39 of section 400. 3-4 Geo. V. c. 43, s. 411; 4 Geo. 5, c. 33, s. 15. Naming streets, numbering houses.

422. By-laws may be passed by Boards of Commissioners of Police of cities.

Cab Drivers—Licensing of

1. For licensing drivers of cabs. Licensing cab drivers.

Fares for Conveyance of Goods and Passengers.

3. For establishing the rates of fare to be taken by the owners or drivers of vehicles for the conveyance of goods or passengers, either wholly within the city, or from any point within the city to any other point not more than three miles beyond its limts, and providing for enforcing payment of such fares. Rates of fare for conveyance of goods or passengers.

Livery Stables, etc.—Hours of Labour.

4. For regulating the hours of labour of persons employed in livery or boarding stables as drivers of motor vehicles, cabs, carriages, or sleighs kept for hire, or by the owners of horses, carts, trucks, omnibuses, and other vehicles kept for hire. Regulating hours of labour of persons employed in livery stables etc.

Livery Stables, etc.—Licensing of.

5. For licensing and regulating the owners of livery stables and of horses, cabs, carriages, carts, trucks, sleighs, omnibuses, and other vehicles regularly used for hire within the city, whether such owners reside within or without the city. Licensing and regulating livery stables, cabs, etc.

Parades and Traffic on Highways.

6. For regulating parades or processions on highways, and from time to time, and as occasion may require, prescribing the routes of travel to be observed by all vehicles, horses, and persons upon the highways, and preventing the obstruction of the highways during public processions or public demonstrations, and for giving directions to the Police Constables for keeping order, and preventing any collision or obstruction of traffic at the intersections or other frequented portions of the highways on all occasions when the highways are thronged or liable to obstruction. Regulating traffic and parades.

(*a*) This paragraph shall not affect the right, if any, of a street railway company to regulate the routes of its cars and no regulation or direction which may affect a street railway company shall be made or given until the company has been afforded an opportunity of being heard. 3-4 Geo. V. c. 43, s. 422.

Members of the Council—Payment of.

Remuneration to councillors and committee-men.

424. By-laws may be passed by the councils of counties and townships for paying the members of the council for their attendance at meetings of the council or of its committees, at a rate not exceeding $5 a day, and five cents for each mile necessarily travelled in going to and from such meetings. 3-4 Geo. V. c. 43, s. 424.

Members of Certain Councils may be Appointed Commissioners.

Appointment of member of council as road commissioner, etc.

426. A member of the council of a county, village, or township may be appointed commissioner, superintendent or overseer of any highway or of any work undertaken wholly or in part at the expense of the corporation and may be paid the like remuneration for his services as if he were not a member of the council. 3-4 Geo. V. c. 43, s. 426.

PART XXI.

HIGHWAYS AND BRIDGES.

Powers and Duties as to

Interpretation.

429.—(1) In this Part

"County Bridge."

(*a*) "County bridge" shall mean a bridge under the exclusive jurisdiction of the council of a county.

(2.) Except as provided by section 445 this Part shall not apply to a Provincial road or bridge under the control of the Crown. 3-4 Geo. V. c. 43, s. 429.

Power to acquire part of highway.

430. Where by this Part power is conferred upon a council to pass by-laws for acquiring or for assuming a highway it shall include the power to pass by-laws for acquiring or for assuming part of a highway. 3-4 Geo. V. c. 43, s. 430.

What councils to exercise powers *re* highways and bridges.

431. Where power to pass by-laws in respect of a highway or bridge is by this Act conferred on a council, unless otherwise expressly provided, it shall be exercisable only by the council having jurisdiction over the highway or bridge, or if the highway or bridge is under the joint jurisdiction of two or more councils only by the joint action of such councils, and a by-law by all of them shall be necessary for the exercise of such power. 3-4 Geo. V. c. 43, s. 431.

432. Except in so far as they have been stopped up according to law all allowances for roads made by the Crown surveyors, all highways laid out or established under the authority of any statute, all roads on which public money has been expended for opening them, or on which statute labour has been usually performed, all roads passing through Indian lands, all roads dedicated by the owner of the land to public use, and all alterations and deviations of and all bridges over any such allowance for road, highway or road, shall be common and public highways. 3-4 Geo. V., c. 43, s. 432. What shall constitute public highways.

433. Unless otherwise expressly provided, the soil and freehold of every highway shall be vested in the corporation or corporations of the municipality or municipalities, the council or councils of which for the time being have jurisdiction over it under the provisions of this Act. 3-4 Geo. V. c. 43, s. 433. Highways vested in corporation having jurisdiction over them.

434. Except where jurisdiction over them is expressly conferred upon another council, the council of every municipality shall have jurisdiction over all highways and bridges within the municipality. 3-4 Geo V. c. 43, s. 434. Jurisdiction of councils over highways.

435. The next preceding two sections shall not apply to roads or bridges owned by companies or individuals. 3-4 Geo. V. c. 43, s. 435. Exception as to road owned by company, etc.

436.—(1) The council of a county shall have jurisdiction over every Jurisdiction of county councils over roads and bridges.

(*a*) Highway bridge and boundary line assumed by the council:

(*b*) Bridge crossing a river, stream, pond or lake forming or crossing a boundary line between local municipalities other than a city or separated town in the county: and

(*c*) Bridge crossing a river or stream over 100 feet in width within the limits of a village in the county where the bridge forms part of a main highway leading through the county.

(2) The council may provide that the jurisdiction conferred upon it by clause (*b*) of subsection 1 shall not extend to bridges over rivers, streams, ponds or lakes, less than 80 feet in width, or of such width less than 80 feet, as may be specified in the by-law. 3-4 Geo. V. c. 43, s. 436. Power to limit jurisdiction.

437. The councils of the corporations whose duty it is to erect and maintain bridges over rivers, streams, ponds or lakes forming or crossing a boundary line between counties shall have joint jurisdiction over such bridge. 3-4 Geo. V. c. 43, s. 437. Jurisdiction over bridges on county boundaries.

438. The councils of the corporations whose duty it is to erect and maintain bridges over rivers, streams, ponds or lakes forming or crossing a boundary line between a county and a city or separated town shall have joint jurisdiction over such bridges. 3-4 Geo. V. c. 43, s. 438. Over bridges on boundaries between county and city, etc.

Over boundaries between local municipalities.

439. The councils of the local municipalities between which they run shall have joint jurisdiction over all boundary lines, whether or not they form also county boundary lines, which have not been assumed by the council of the county, and over the bridges on them except such bridges crossing rivers, streams, ponds or lakes forming or crossing such boundary lines as by the provisions of this Act are under the jurisdiction of another council or other councils. 3-4 Geo. V. c. 43, s. 439.

Jurisdiction where corporation owns bridge etc., in another municipality.

440. Where a boulevard, drive or highway or a public avenue or walk is owned or has been opened and laid out or is under the authority of this Act assumed, or a bridge is owned or has been constructed or is under the authority of this Act assumed by the corporation of a municipality other than that in which it is situate the council of that corporation shall have jurisdiction over it. 3-4 Geo. V. c. 43, s. 440.

Assumption by villages of bridges under control of county.

441.—(1) The council of a village may pass by-laws for the assumption by the corporation of the village, with the consent of, and on such terms and conditions as may be agreed on with, the council of the county, of any bridge within the limits of the village and under the jurisdiction of the council of the county.

Effect of by-law.

(2) When the by-law takes effect the bridge shall cease to be under the jurisdiction of the council of the county and shall come and thereafter remain under the jurisdiction of the council of the village, and shall be and remain toll free. 3-4 Geo. V. c. 43, s. 441.

Approaches to bridges.

442. The council having jurisdiction over a bridge shall have jurisdiction over the approaches to it for 100 feet next adjoining each end of the bridge. 3-4 Geo. V. c. 43, s. 442.

Joint maintenance of roads where lands annexed to city or town.

443. When land annexed to a city or town under this Act abuts on a highway the highway shall be under the joint jurisdiction of the councils of the city or town and the adjacent municipality or municipalities. 3-4 Geo. V. c. 43, s. 443.

Agreements between adjoining municipalities as to maintenance of boundary road.

444.—(1) The corporations of adjoining municipalities may enter into an agreement for the maintenance and repair of any highway forming the boundary between such municipalities, including the bridges thereon which it is their duty to maintain and repair, whereby each of them may undertake, for a term of years not to exceed ten years, to maintain and keep in repair any portion of such highway for its whole width, and to indemnify and save harmless the other from any loss or damage arising from the want of repair of such portion.

Agreement to be registered.

(2) When the agreement is confirmed by by-law of the council of each of the municipalities, the by-law shall be registered in the registry office of the registry division in which the highway is situate.

Effect of.

(3) After the registration of the by-law, each corporation shall have jurisdiction over that portion of the road which it has undertaken to maintain and keep in repair, and shall be liable for the damages incurred

by reason of neglect to maintain and keep the same in repair; and the other corporation shall be relieved from all liability in respect of its maintenance and repair. 3-4 Geo. V. c. 43, s. 444.

Proclamation bringing government road or bridge under jurisdiction of municipality.

445. Where the Lieutenant-Governor in Council by proclamation declares, which it shall be lawful for him to do, that any public road or bridge under the control of the Minister of Public Works shall not be under his control after a day named in the proclamation, such road or bridge shall after that day cease to be under the control of the Minister and no tolls shall be collected thereon and the road or bridge shall be under the jurisdiction of the council of the local municipality in which it is situate, or if it is partly situate in two or more municipalities shall be under the jurisdicton of the councils of such municipalities, each having jurisdiction over the part which lies within its municipality, or if it lies between two or more municipalities shall be under the joint jurisdiction of their councils. 3-4 Geo. V. c. 43, s. 445.

Assumption by county councils of highways, bridges and boundary lines.

446.—(1) The council of a county may by by-law assume as a country road any highway, or as a county bridge any bridge, within a town, not being a separated town or within a village or township.

(2) The by-law shall not take effect until assented to by the council of the town, villages or township.

(3) The council of a county may also by by-law assume as a county road any county or township boundary line.

(4) The council of a county may also by by-law assume as a county road any highway in a town, not being a separated town, or in a village or township which connects with a county road.

(5) Where a highway is assumed under this section the bridges thereon shall also be assumed as county bridges.

Repeal of by-law.

(6) A by-law passed under the authority of this section may be at any time repealed by the council of the county.

Effect of repeal.

(7) After the repeal of the by-law such highway or bridge shall cease to be under the jurisdiction of the council of the county and shall fall and be under the jurisdiction of the council or councils which had jurisdiction over it at the time of the passing of the by-law for assuming it. 3-4 Geo. V. c. 43, s. 446.

Assuming highway in adjacent municipality as a public avenue or walk.

447.—(1) The council of a city or town may pass by-laws for assuming for the purpose of a public avenue or walk any highway in an adjacent local municipality and for acquiring so much land on either side of such highway as may be required to increase its width to not more than 100 feet.

(2) The by-law shall not take effect unless or until it is assented to by by-law of the council of the adjacent municipality. 3-4 Geo. V. c. 43, s. 447.

Abandonment by county of roads.

448.—(1) The council of a county may by by-law abandon the whole or any part of a toll road owned by the corporation of the county or of any other road owned by it, whether the road is situate wholly within the county or partly within it and partly within an adjoining county.

Clerk to transmit copies of by-law.

(2) Forthwith after the passing of the by-law the clerk shall transmit by registered post to the clerk of every local municipality through or along or on the border of which the road runs a copy of the by-law certified under his hand and the seal of the corporation to be a true copy.

Approval of Municipal Board.

(3) The by-law shall not take effect unless or until it is approved by the Municipal Board, nor shall it take effect as to the part of the road lying within or along or on the border of a local municipality whose council does not by by-law assent to the by-law.

Jurisdiction after abandonment.

(4) From and after the taking effect of the by-law the council of a municipality within which any part of the road so abandoned lies shall have jurisdiction over that part of it which lies within the municipality, and where any part of a road so abandoned lies between or on the border of two or more local municipalities the councils of such municipalities shall have joint jurisdiction over that part of it.

Exception.

(5) Nothing in this section shall extend or apply to a bridge which under the provisions of this Act is to be maintained wholly or partly by the corporation of the county. 3-4 Geo. V. c. 43, s. 448.

Bridges over 300 ft. in length in townships and certain towns may be declared county bridges.

449.—(1) A bridge of a greater length than 300 feet in a town having an equalized assessment of less than $1,000,000 or in a township may, on the application of the council of such town or township, be declared to be a county bridge where

(*a*) It is used by the inhabitants of other municipalities;

(*b*) It is situate on an important highway affording means of communication to several municipalities; and

(*c*) On account of its length, and for the reasons mentioned in clauses (*a*) and (*b*), it is unjust that the burden of maintaining and repairing it should rest upon the corporation of the town or township.

Order of Judge.

(2) An order declaring the bridge to be a county bridge may be made by a Judge of the County Court of the county in which it is situate, on the application of the council of the town or township.

Notice of application.

(3) Notice of the application shall be served on the corporation of the county, at least thirty days before the day on which it is to be made.

Hearing.

(4) Each corporation shall be entitled to be represented by counsel on the hearing of the application, and the evidence may, if the Judge sees fit, and shall if either party so requests, be given under oath.

Power of judge.

(5) If the Judge is of opinion that for the reasons mentioned in subsection 1, the bridge should be declared to be a county bridge, he shall by his order so declare, and in that case he shall determine whether the expense of maintaining and repairing the bridge shall be borne by the corporation of the county or partly by it and partly by the corporation of the town or township, and if he determines that it should be borne partly by each, he shall fix the proportions in which the expense is to be so borne, and his declaration and determination shall be embodied in the order.

Registration of order.

(6) If the order declares the bridge to be a county bridge it shall be registered in the registry office of the registry division in which the bridge is situate.

Appeal.

(7) An appeal shall lie from the order of the Judge to a Divisional Court, and the proceedings upon the incidental to the appeal shall be the same as in the case of an appeal from a Judge of that Court, sitting in Court.

Registration of order of divisional court.

(8) If the order is reversed or varied by the order of the Divisional Court, or if an order declaring the bridge to be a county bridge is made by the Divisional Court, the order of that Court shall be registered as provided by subsection 6.

Effect of order after registration.

(9) Where the order of the Judge of the County Court declares the bridge to be a county bridge, except where it is reversed, and subject to any variation of it on appeal, from and after the registration of the order, or where the order has been reversed and an order declaring the bridge to be a county bridge has been made by the Divisional Court from and after the registration of the order of the Divisional Court, the bridge shall be a county bridge.

Payment to county of proportion of maintenance.

(10) Whenever any expenditure is made by the corporation of the county in maintaining or repairing the bridge a proportion of which the corporation of the town or township is by the order required to bear, that proportion of the expenditure shall be payable by the last named corporation to the corporation of the county on demand.

When new application may be made.

(11) Where the application is dismissed, either by the order of the Judge of the County Court or by the order of the Divisional Court, a new application shall not be made until five years have elapsed from the date of the order, and any new application thereafter made may be dealt with without regard to the former order, and the preceding subsections shall apply *mutatis mutandis* to the application.

Power to agree as to maintenance.

(12) In the case provided for by this section the councils of the town or township and the council of the county may at any time enter into an agreement as to the proportions in which the cost of maintaining the bridge and keeping it in repair shall be borne by their respective corporations.

What agreement to provide.

(13) The agreement shall provide that the bridge shall thereafter or after a day to be named be under the exclusive jurisdiction of the council of the county or remain under the jurisdiction of the council of the town or township.

Order of judge embodying agreement.

(14) The terms of the agreement shall be embodied in an order of the Judge of the County Court which may be made upon the application of either corporation, and the order so made shall supersede any former order made by him.

(15) If the agreement provides that the bridge is to come under the exclusive jurisdiction of the council of the county the order made under the next preceding subsection shall so declare.

Registration of order.

(16) The order made under subsection 14 shall be registered as provided by subsection 6, and shall have the same effect as an order upon an application made under subsection 2, but the order shall not be subject to appeal. 3-4 Geo. V. c. 43, s. 449.

Highways assumed by county to be planked, gravelled, etc.

450. The council of a county which assumes as a county road or bridge, any highway or bridge within a township, shall with as little delay as reasonably may be, and at the expense of the county cause the highway to be graded and drained and gravelled, macadamized or surfaced or paved with other permanent material, or the bridge to be built in a good and substantial manner and shall maintain and keep the same in repair. 3-4 Geo. V., c. 43, s. 450.

County to build and maintain certain bridges.

451. The council of the county shall cause to be built and maintained at the expense of the corporation of the county the bridges mentioned in clauses (*b*) and (*c*) of section 436. 3-4 Geo. V. c. 43, s. 451.

Maintenance of bridges on county boundary lines.

452. Where a river, stream, pond or lake forms or crosses a boundary line between two or more counties, it shall be the duty of the corporations of the counties, and where it forms or crosses a boundary line between a county and a city or a separated town, it shall be the duty of the corporations of the county and the city or separated town to erect and maintain bridges over such river, stream, pond or lake. 3-4 Geo. V. c. 43, s. 452.

Maintenance of boundary lines.

453.—(1) Boundary lines between local municipalities, including those which also form county boundary lines, shall be maintained by the corporations of such municipalities, and they shall also erect and maintain all necessary bridges on such boundary lines.

(2) Subsection 1 shall not apply to boundary lines assumed by the council of the county or to such bridges as are under the provisions of this Act to be erected or maintained by another corporation. 3-4 Geo. V. c. 43, s. 453. Exceptions.

454. Where the council of a county passes a by-law under subsection 2 of section 436 it shall be the duty of the councils of the local municipalities to erect and maintain all necessary bridges from the erection and maintenance of which the council of the county is relieved by the by-law. 3-4 Geo. V. c. 43, s. 454. Local municipalities to erect and maintain certain bridges.

455. All boundary lines, and all bridges over rivers, streams, ponds or lakes forming or crossing a boundary line between two or more local municipalities in a provisional judicial district shall be erected and maintained by the corporation of such municipalities and their councils shall have joint jurisdiction over them; and if the councils fail to agree as to the proportion of the expense to be borne by each corporation the same shall be determined by arbitration. 3-4 Geo. V. c. 43, s. 455. Maintenance of boundary lines and bridges in provisional judicial district.

Driftwood in Streams.

456.—(1) Where a river or a stream forms a boundary line between two or more municipalities in a county, the corporation of the county shall keep it free from all accumulations of driftwood or fallen timber. Keeping rivers free from driftwood, etc.

(2) Where the river or stream forms a boundary line between two or more counties, the duty mentioned in subsection 1 shall be performed by the corporations of the counties, and where the river or stream forms the boundary line between a county and a city or separated town, shall be performed by the corporation of the county and the corporation of the city or separated town, and in case of failure to agree in either case, as to the share or proportion of the expense incurred in performing the duty to be borne by them respectively, the same shall be determined by arbitration. 3-4 Geo. V. c. 43, s. 456. What corporations to perform the work and apportionment of expense.

457.—(1) Where a stream or creek is cleared of all logs, brush or other obstructions to the boundary line between a township and an adjoining township into which the stream or creek flows, the council of the township in which the stream or creek has been so cleared may give notice in writing to the corporation of such adjoining township requesting its council to clear such stream or creek through the municipality. Keeping stream free from logs, brush, etc., in townships.

(2) It shall be the duty of such last mentioned corporation, within six months after the service of the notice, to enforce the removal of all obstructions in such stream or creek within the municipality, to the satisfaction of any person whom the council of the county in which the municipality whose council gave the notice is situate, appoints to inspect the same. Notice requiring other township to remove obstructions.

Effect of failure to perform duty.

(3) If the corporation receiving the notice neglects to perform such duty, and by reason of its neglect any highway or bridge in either of the townships becomes out of repair, the corporation in default, and that corporation only, shall be responsible for the damages sustained by any person by reason of such want of repair. 3-4 Geo. V. c. 43, s. 457.

Deviations of boundary lines.

458. Where, on account of physical difficulties or obstructions existing on a boundary line between municipalities, and in order to obtain a better line of road, a road has been heretofore or is hereafter laid out and opened which does not follow the course of such boundary line throughout, but in some place or places so deviates from it as to lie wholly within one of the municipalities, such road shall nevertheless be deemed to be, for the purposes of this Act, the boundary line between the municipalities; and a river, stream, pond or lake which crosses it where it so deviates shall be deemed to be a river, stream, pond or lake crossing a boundary line within the meaning of this Act. 3-4 Geo. V. c. 43, s. 458.

Specifications of certain bridges

459. Every iron, steel, concrete or stone bridge constructed by the corporation of a county shall be built in accordance with specifications approved by the engineer of highways of the Department of Public Works. 3-4 Geo. V. c. 43, s. 459.

Liability for repair of public roads, etc.

460.—(1) Every highway and every bridge shall be kept in repair by the corporation the council of which has jurisdiction over it, or upon which the duty of repairing it is imposed by this Act, and in case of default, the corporation shall be liable for all damages sustained by any person by reason of such default.

Limitation of actions.

(2) No action shall be brought against a corporation for the recovery of damages occasioned by such default, whether the want of repair was the result of nonfeasance or misfeasance, after the expiration of three months from the time when the damages were sustained.

Snow or ice on sidewalks.

(3) Except in case of gross negligence a corporation shall not be liable for a personal injury caused by snow or ice upon a sidewalk.

Notice of action.

(4) No action shall be brought for the recovery of the damages mentioned in subsection 1 unless notice in writing of the claim and of the injury complained of has been served upon or sent by registered post to the head or the clerk of the corporation, in the case of a county or township within thirty days, and in the case of an urban municipality within seven days after the happening of the injury, not unless, where the claim is against two or more corporations jointly liable for the repair of the highway or bridge, the prescribed notice was given to each of them within the prescribed time.

When dispensed with.

(5) In case of the death of the person injured, failure to give the notice shall not be a bar to the action, and, except where the injury was caused by snow or ice upon a sidewalk, failure to give or insufficiency of the notice shall not be a bar to the action, if the court or Judge before

whom the action is tried is of the opinion that there is reasonable excuse for the want or insufficiency of the notice and that the corporation was not thereby prejudiced in its defence.

To what roads applicable.

(6) This section shall not apply to a road, street or highway laid out or to a bridge built by a private person or by a body corporate until it is established by by-law of the council or otherwise assumed for public use by the corporation.

When corporation not responsible for acts of others.

(7) Nothing in this section shall impose upon a corporation any obligation or liability in respect of any act or omission of any person acting in the exercise of any power or authority conferred upon him by law, and over which the corporation had no control, unless the corporation was a party to the act or omission, or the authority under which such person acted was a by-law, resolution or license of its council.

When corporation not liable for damages.

(8) A corporation shall not be liable for damages under this section unless the person claiming the damages has suffered by reason of the default of the corporation a particular loss or damage beyond what is suffered by him in common with all other persons affected by the want of repair.

Relief from obligation to rebuild.

(9) Where a bridge which it is the duty of a corporation to repair is destroyed or so damaged that it is necesary to rebuild it the Municipal Board may, upon the application of the corporation relieve it from the obligation to rebuild the bridge, if the Board is satisfied that it is no longer required for the public convenience or that the re-building of it would entail a larger expenditure that would be reasonable, having regard to the use that would be made of the bridge if it were re-built.

Conditions of granting relief.

(10) The relief may be granted on such terms and conditions as the Board may deem just, and such notice of the application shall be given as the Board may direct.

Costs of pending actions.

(11) The next preceding two subsections shall not affect the costs of any pending action. 3-4 Geo. V. c. 43. s. 460.

Repair of crossings, etc., made by leave of municipality on toll roads.

461. A corporation shall, in the absence of an agreement to the contrary, keep in repair all crossings, sewers, culverts and approaches, sidewalks and other works made or constructed by it or by any person with the permission of its council, upon any toll road in or passing through the municipality, and in case of default shall be liable, as in the case provided for by section 460. 3-4 Geo. V. c. 43, s. 461.

Apportionment of damages

462.—(1) Where two or more corporations are jointly liable for keeping in repair a highway or bridge, there shall be contribution between them as to the damages sustained by any person by reason of their default in so doing.

Action to be against all corporations.

(2) Any action by any such person shall be brought against all such corporations, and any of them may require that the proportions in which such damages and the costs of the action are to be borne by them shall be determined in the action.

What to be taken into account.

(3) In settling such proportions, either in the action or otherwise, regard shall be had to the extent to which each corporation was responsible, either primarily or otherwise, for the act or omission by reason of which the damages became payable or are recoverable and the damages and costs shall be apportioned between them accordingly. 3-4 Geo. V. c. 43, s. 462.

Members of council and employees not liable for non-repair of highways.

463.—(1) Where an action may be brought against a corporation by a person who has sustained damages by reason of its default in keeping in repair a highway or bridge, no action shall be brought by him in respect of it or to recover such damages, or any part of them against any member of the council or officer or employee of the corporation personally, but the remedy therefore shall be against the corporation.

Contractors not deemed employees.

(2) A mere contractor with the corporation or an officer or employee who is such contractor, by reason of whose act or omission the damages were caused, shall not be deemed an employee within the meaning of subsection 1. 3-4 Geo. V., c. 43, s. 463.

Remedy over, for damages caused by non-repair against persons causing same.

464.—(1) Where an action is brought to recover damages sustained by reason of any obstruction, excavation or opening in or near a highway or bridge placed, made, left or maintained by any person other than the corporation or a servant or agent of the corporation, or by reason of any negligent or wrongful act or omission of any person other than the corporation or a servant or agent of the corporation, the corporation shall have a remedy over against such other person for, and may enforce payment of the damages and costs which are recovered against the corporation.

Remedy over in some action.

(2) The corporation shall be entitled to such remedy over in the same action, if the other person is a party to the action, and it is established in the action as against him that the damages were sustained by reason of an obstruction, excavation, or opening so placed, made, left or maintained by him.

Adding party defendant.

(3) The corporation may in such action have the other person, if not already a defendant, added as a party defendant or third party for the purposes of the remedy over; and such person may defend the action as well against the plaintiff's claim as against the claim of the corporation.

Where person causing damage has not been made a party.

(4) If such person is not a party defendant, or is not added as a party defendant or third party, or if the corporation has paid the damages before an action is brought to recover the same, or before a recovery thereof in an action against the corporation, the corporation

shall have the remedy over, by action against such person, but he shall be deemed to admit the validity of the judgment obtained against the corporation, only where a notice has been served on him, pursuant to Rules of Court, or where he has admitted, or is estopped from denying the validity of such judgment.

When a fresh action is necessary.

(5) Where such notice has been served, and there has been no such admission or estoppel, and such person has not been made a party defendant or third party to the action against the corporation, or where the damages have been paid without action, or without recovery of judgment against the corporation, the liability of the corporation for such damages, and the fact that the damages were sustained under such circumstances as to entitle the corporation to the remedy over, must be established in the action against such person to entitle the corporation to recover in the action. 3-4 Geo. V. c. 43, s. 464.

Determination of disputes as to duty to erect and maintain bridge or repair highway.

465.—(1) Whenever there is a dispute between the councils of any two or more corporations as to the corporation on which the obligation to build and maintain or to build or maintain a bridge or to keep in repair a highway rests, the Supreme Court may upon the application of any or either of the corporations determine the matter in dispute on an originating motion: or the Court, if of opinion that the matter in dispute cannot satisfactorily be determined on an originating motion, or that for any other reason it ought not to be so determined, may direct that an action may be brought or that an issue be tried for the purpose of determining the matter in dispute, and the court may in either case compel by mandamus the performance of the obligation by the corporation upon which it is found to rest.

Disputes as to apportionment of cost of erecting or maintaining.

(2) Except in the cases provided for by section 468, where the dispute is as to the proportions in which the corporations should contribute to the cost of erecting and maintaining or of erecting or maintaining a bridge or of keeping in repair a highway, the matter in dispute shall be determined by arbitration. 3-4 Geo. V. c. 43, s. 465.

Laying out highway where no original allowance.

466.—(1) Where an allowance for road was not reserved in the original survey on a township boundary or part of it, the councils of the townships may establish and lay out a highway on such boundary or part of it.

Passing by-law.

(2) The councils of any or either of the municipalities may pass a by-law for establishing and laying out such a highway and for acquiring the land requisite for the one-half of it which lies within the limits of its municipality.

Copy of by-law to be sent to other townships.

(3) The clerk shall within four days after the passing of the by-law transmit by registered post to the clerk of each of the other townships a copy of the by-law certified under his hand and the seal of the corporation to be a true copy.

Arbitration.

(4) If the other council or councils do not within six months after such notice pass a by-law or by-laws in similar terms, the council by which the by-law was passed may require the question of establishing and laying out the proposed highway to be determined by arbitration.

Power of arbitrators.

(5) The arbitrators shall determine whether or not the proposed highway shall be established and laid out, and if they determine that it shall be established and laid out they shall also determine in what proportions the cost of the site of it shall be borne by each of the corporations.

Duties of other townships when arbitrators determine that highway should be laid out.

(6) If it is determined by the arbitrators that the proposed highway shall be established and laid out, the other councils shall forthwith after notice of the award pass the necessary by-laws for establishing and laying out the proposed highway and for acquiring the land requisite for the one-half of it which will lie within the limits of their respective municipalities, and for otherwise carrying out the provisions of the award, and shall proceed with all reasonable despatch to carry into effect the provisions of the by-law.

Effect of determination against laying out highway.

(7) If it is determined by the arbitrators that the proposed highway shall not be established and laid out, no further proceedings shall be taken under this section within two years from the date of the award or within such time not exceeding in all four years, as the arbitrators may by their award determine. 3-4 Geo. V. c. 43, s. 466.

Disputes as to bridge or highway to be settled by arbitration.

467.—(1) Where a highway or bridge is under the joint jurisdiction of the councils of two or more municipalities and they are unable to agree as to any action which one or more of them desire to be taken in the exercise of such joint jurisdiction, any of them may require that the matter in dispute shall be determined by arbitration, and in that case shall prepare a draft by-law for carrying into effect what it is desired shall be done, and serve a copy of it on the clerk of the other municipalities with a notice that it is its desire that such a by-law shall be passed.

Award.

(2) If it is determined by the arbitrators that what is proposed ought to be done, they shall by their award so direct, and in that case each council shall forthwith after notice of the award pass a by-law in accordance with the draft by-law and shall, without unnecessary delay, do all things which on its part are necessary for carrying into effect the objects of the by-law. 3-4 Geo. V., c. 43, s. 467.

Determination by county council of disputes as to opening or maintaining township boundary lines.

468.—(1) Where the councils of the townships having joint jurisdiction over a township boundary line fail to agree as to the character of the work to be done in opening, maintaining or repairing it, or as to the proportions in which the cost of the work is to be borne by the corporations of the townships respectively, any or either of such councils may apply to the council of the county to determine the matters in dispute.

Enforcement by county of opening up or repair on petition of ratepayers.

(2) Where the township councils having the joint jurisdiction over it neglect or refuse to open up and make, maintain and keep in repair any such boundary line, a majority of the ratepayers resident on land abutting on it may apply to the council of the county to enforce the opening up and the making, maintaining and keeping in repair of such boundary line.

What matters to be determined by county council.

(3) The application shall be by petition and the council of the county after notice to all the corporations interested and after hearing them and the petitioning ratepayers, if the petition is by ratepayers, or such of them as desire to be heard, shall determine in the case provided for by sub-section 1, what work shall be done and the proportions in which the cost of it shall be borne by the corporations of the townships respectively, and in the case provided for by subsection 2 whether the boundary line shall be opened up and the proportions in which the corporations of the townships shall respectively bear the cost of opening up, making, maintaining and keeping in repair the boundary line, and in either case may direct that the statute labour or part of it shall be applied by each of the corporations for such purposes.

Appointment of commissioners to enforce order.

(4) The determination and direction of the council of the county shall be embodied in an order or resolution, and the council shall appoint one or more commissioners to execute and enforce any direction so made.

Townships to have opportunity of doing the work.

(5) If the councils of the townships intimate to the council of the county or to the commissioners their intention to proceed with the work directed to be done and to conform to the direction of the council of the county, the commissioners shall delay proceedings to carry out the work directed to be done for a reasonable time to enable the township councils to do it, but if the work is not proceeded with with such despatch as the commissioners deem necessary they shall themselves complete the work.

Apportionment and collection of cost of work of commissioners.

(6) The cost of any work done by the commissioners shall be by them apportioned between the corporations of the townships in accordance with the order or resolution of the council of the county, and the commissioners shall certify to the treasurer of the county the amount payable by each of such corporations, and the treasurer shall retain the same out of any money in his hands belonging to the corporation, but if there is not in the hands of the treasurer any such money or not sufficient to pay the amount payable by the corporation, the amount payable or the amount of the deficiency, as the case may be, shall be added to the county rate payable by the corporation in default.

County boundaries not affected.

(7) This section shall not apply to a township boundary line which is also a county boundary line. 3-4 Geo. V. c. 43, s. 468.

Determination by Municipal Board of disputes *re* deviation of county boundary lines.

469. Where the councils of the townships having joint jurisdiction over a county boundary line are unable to agree as to—

(*a*) The necessity for a deviation of the road from the boundary line, or

(*b*) The location of the deviation, or

(*c*) The use of an existing highway in lieu of a deviation, or

(*d*) The proportions in which the cost of opening, making and maintaining the deviation or the existing highway to be used in lieu of a deviation, is to be borne,

any of the councils may apply to the Municipal Board to determine the matter in dispute, and the Board or any member of it, after notice to the corporations interested and hearing such of them as desire to be heard, shall determine the matter in dispute and may make such order as may be deemed just, and such order shall be final and not subject to appeal. 3-4 Geo. V. c. 43, s. 469.

Power of Ontario Motor League to erect the guide and mile posts, etc.

470.—(1) The Ontario Motor League may, at its own expense and subject to such regulations as the council of the municipality may prescribe, erect and maintain guide posts at road intersections and mile posts on the highways to indicate distances and danger signals at hills which may be deemed to be dangerous or unsafe for travellers.

How same to be erected.

(2) Every such guide post, mile post and danger signal shall be so placed as not to obstruct the highway or to endanger the safety of travellers, and nothing shall appear on or be affixed or attached to it, but a notice indicating the purpose which the guide post, mile post or danger signal is designed to serve.

Penalty.

(3) Every person who contravenes any of the provisions of subsection 2 shall incur a penalty of $5 for every such contravention.

Defacing posts erected.

(4) No person shall cut or throw down or injure or deface any such guide post, mile post or danger signal, and for every contravention of this subsection the person offending shall incur a penalty not exceeding $50. 3-4 Geo. V. c. 43, s. 470.

Powers of C.W.A. as to erection of guide posts, etc.

471. The Canadian Wheelman's Association of the Dominion of Canada shall have the like power as is by the next preceding section conferred on the Ontario Motor League, and all the provisions of that section shall apply to guide posts, mile posts and danger signals erected or maintained by the Association; but where either the League or the Association has exercised the powers conferred upon it upon any part of a highway the other shall not have the right to exercise its powers thereon. 3-4 Geo. V. c. 43, s. 471.

472.—(1) The council of every municipality may pass by-laws, Establishing, widening, stopping up, etc., highways, laying out boulevards, etc.

(*a*) For establishing and laying out highways;

(*b*) For widening, altering or diverting any highway or part of a highway;

(*c*) For stopping up any highway or part of a highway and for leasing or selling the soil and freehold of a stopped up highway or part of a highway.

(*d*) For setting apart and laying out such parts as may be deemed expedient of any highway for the purpose of carriage ways, boulevards and sidewalks, and for beautifying the same, and making regulations for their protection;

(*e*) For permitting subways for cattle under and bridges for cattle over any highway.

(2) Nothing in subsection 1 shall authorize a council to interfere with any public road or bridge vested in the Crown in right of Ontario or in any public Department, Board or officer of Ontario. Exceptions as to exercise of power.

(3) A by-law passed under the authority of clause (*b*) or clause (*c*) of subsection 1 in respect of an allowance for road reserved in the original survey along or leading to the bank of any river or stream or on the shore of any lake or other water shall not take effect until it has been approved by the Lieutenant-Governor in Council. Approval of Lieutenant-Governor to by-law.

(4) The powers conferred by subsection 1 shall not be exercised without the consent of the Governor-General in Council in respect of, Approval of Governor-General to by-law.

(*a*) Any street, lane or thoroughfare made or laid out by His Majesty's Ordnance or the Principal Secretary of State in whom the Ordnance estates became vested under the Act of the late Province of Canada passed in the 19th year of the reign of Her late Majesty Queen Victoria, Chapter 45, or under Chapter 24 of the Consolidated Statutes of Canada, or made or laid out by the Government of Canada;

(*b*) Any land owned by the Crown in right of the Dominion of Canada;

(*c*) Any bridge, wharf, dock, quay or other work vested in the Crown in right of the Dominion of Canada;

or so as to interfere with any land reserved for military purposes or with the integrity of the public defences, and the consent of the Governor-General in Council shall be recited in the by-law, but the by-law shall not be quashed or open to question because of the omission

to recite it if the consent has been in fact given. 3 Edw. VII. c. 19, s. 628, *amended*.

Limitation of power of county.

(5) The powers conferred by clause (*c*) of subsection 1 shall not be exercised by the council of a county in respect of a highway or part of a highway within the limits of a city, town or village in or adjoining the county.

Approval of district judge or county council to township by-law.

(6) A by-law of the council of a township, passed under the authority conferred by clause (*c*) of subsection 1, in the case of a township in unorganized territory, shall not have any force unless and until approved by a Judge of the District Court of the district in which the township is situate, and in other cases unless and until confirmed by a by-law of the council of the county in which the township is situate passed at an ordinary meeting of the council held not sooner than three months or later than one year after the passing of the by-law of the council of the township. 3-4 Geo. V. c. 43, s. 472.

Right of ingress and egress not to be taken away by closing road.

473.—(1) A by-law shall not be passed for stopping up, altering or diverting any highway or part of a highway if the effect of the by-law will be to deprive any person of the means of ingress and egress to and from his land or place of residence over such highway or part of it unless in addition to making compensation to such person, as provided by this Act, another convenient road or way of access to his land or place of residence is provided.

By-law, when to take effect.

(2) The by-law shall not take effect until the sufficiency of such road or way of access has been agreed upon or unless and until, if not agreed upon, its sufficiency has been determined by arbitration as hereinafter mentioned.

Arbitration to determine sufficiency of road.

(3) If such person disputes the sufficiency of the road or way of access provided, the sufficiency of it shall be determined by arbitration under this Act, and if the amount of compensation is also not agreed upon both matters shall be determined by one and the same arbitration.

By-law void if road insufficient.

(4) If the arbitrators determine that the road or way of access provided is insufficient they may by their award determine what road or way of access should be provided, and in that case, unless such last mentioned road or way of access is provided, the by-law shall be void and the corporation shall pay the costs of the arbitration and award. 3-4 Geo. V. c. 43, s. 473.

Possession of unopened road allowance.

474.—(1) A person in possession of and having enclosed with a lawful fence that part of an original allowance for road upon which his land abuts which has not been opened for public use by reason of another road being used in lieu of it or of another road parallel or near to it having been established by law in lieu of it shall as against every person except the corporation the council of which has jurisdiction over the allowance for road be deemed to be legally possessed of such part until a by-law has been passed by such council for opening it.

(2) No such by-law shall be passed until notice in writing of the intention to pass it has been given to the person in possession, at least eight days before the meeting of the council at which the by-law is to be taken into consideration. 3-4 Geo. V. c. 43, s. 474. Notice of by-law to be given.

475.—(1) Before passing a by-law for stopping up, altering, widening, diverting, selling or leasing a highway or for establishing or laying out a highway. Publication of by-law, etc.

(*a*) Notice of the proposed by-law shall be published at least once a week for four successive weeks, and in the case of a village or township shall be posted up for at least one month in six of the most public places in the immediate neighbourhood of the highway or proposed highway, and

(*b*) The council shall hear in person or by his counsel, solicitor or agent any person who claims that his land will be prejudicially affected by the by-law and who applies to be heard.

(2) The clerk shall give the notice upon payment, by the applicant, if any, for the by-law, of the reasonable expenses to be incurred in so doing. 3-4 Geo. V. c. 43, s. 475. Notices.

476. Where the owners of and other persons interested in the land required to be taken for the highway consent in writing to the passing of the by-law for establishing and laying it out, or where such land has been acquired by the corporation, section 475 shall not apply to the by-law. 3-4 Geo. V. c. 43, s. 476. When publication of by-law not required.

477.—(1) Where an allowance for a sideline road between lots in a double front concession in a township was so run in the original survey that the line in the front half of the concession does not meet the line in the rear half, the council of the township may open and lay out a road to connect the ends of such lines where they do not so meet. Side lines in double front concessions.

(2) The by-law shall provide that the road shall be opened and laid out in accordance with a survey to be made by an Ontario Land Surveyor named in the by-law. Term of by-law.

(3) A Judge of the County or District Court of the county or district in which the township is situate, on the application of any person over whose land the connecting road will pass who objects to the surveyor appointed by the by-law, may appoint another Ontario Land Surveyor in the place of the one so appointed. Appointment of another surveyor by judge.

(4) The application shall be made within one month after the service of the copy of the by-law on the applicant and at least five days' notice of the time when and the place where it will be heard by the Judge shall be served upon every other person over whose land the connecting road will pass and upon the clerk of the municipality. Application for appointment.

Compensation, determination as to.

(5) The surveyor appointed by the by-law or, if another is appointed by the Judge in his place, the surveyor so appointed shall determine the compensation to be paid to the persons whose lands are taken for the connecting road, and the amount so determined shall be paid to them by the corporation of the township.

Determination final.

(6) The determination of the surveyor as to the compensation shall be final. 3-4 Geo. V. c. 43, s. 477.

Mistakes in opening road allowances.

478.—(1) Where the council of a municipality desiring to open an original allowance for road has by mistake opened a road which was intended to be, but is not wholly or partly, upon such allowance, the land occupied by the road as so opened shall be deemed to have been expropriated under a by-law of the corporation, and no person on whose land such road or any part of it was opened shall be entitled to bring or maintain an action for or in respect of what was done or to recover possession of his land, but he shall be entitled to compensation under and in accordance with the provisions of this Act as for land expropriated under the powers conferred by this Act.

When right to compensation barred.

(2) The right to compensation shall be forever barred if the compensation is not claimed within one year after the land was first taken possession of by the corporation. 3-4 Geo. V. c. 43, s. 478.

Width of highways.

479.—(1) No highway shall be laid out in any municipality without the sanction of the council of the municipality.

(2) No highway less than 66 feet in width, or except in a city or town more than 100 feet in width, shall be laid out by the council of the municipality without the approval of the Municipal Board or by any owner of land without the approval of the council of the municipality and of the Municipal Board.

Rev. Stat. c. 194.

(3) Nothing in this section shall affect the provisions of The City and Suburbs Plans Act.

(4) Subsection 2 shall not apply to a township in unorganized territory, and a highway less than 66 feet in width may be laid out by the council of any such township subject to and in accordance with the regulations of the Department of Lands, Forests and Mines. 4 Geo. V. c. 33, s. 20.

Dwelling houses on narrow streets.

480. The council of an urban municipality may pass by-laws for regulating the erection or occupation of dwelling houses on narrow streets, lanes or alleys or in crowded or unsanitary districts. 3-4 Geo. V. c. 43, s. 480.

481. The council of a city having a population of not less than 50,000 may pass by-laws for

Power to regulate and prohibit erection of dwelling houses.

(*a*) Prohibiting the erection or occupation of dwelling houses on highways, lanes or alleys of less width than that prescribed by the by-law;

(*b*) Prescribing the minimum area of vacant land which shall be attached to and used with any dwelling house thereafter erected, as the courtyard or curtilage of it;

(*c*) Regulating the manner in which buildings intended to be occupied as dwelling houses are to be constructed within the municipality or within any defined area of it;

(*d*) Prohibiting the erection of dwelling houses or the alteration of other buildings for the purpose of adapting them for use as dwelling houses, if the same front on a highway less than 40 feet in width, unless the street has been established as a highway by by-law of the council or otherwise assumed for public use by the corporation.

482. By-laws may be passed—

Granting aid for opening or improving, etc., highways.

(1) By the council of every municipality for granting aid to the corporation of any immediately adjoining municipality towards opening, widening, maintaining or improving any highway within such municipality or constructing, maintaining or improving any bridge therein.

By local municipalities to county.

(2) By the council of every local municipality for granting aid to the corporation of the county in which the municipality is situate towards opening and making any new road on the boundary of the municipality or constructing any new bridge on such boundary.

By cities and towns to townships.

(3) By the councils of cities and towns for granting aid to the corporation of a township in the county in which the city or town is territorially situate or in an adjoining county towards opening, widening, maintaining or improving any highway in such township which constitutes or is to constitute or forms or is to form part of a highway leading to such city or town, or towards constructing, maintaining or improving any bridge forming or which is to form part of such highway.

By counties to towns, villages and townships, etc.

(4) By the councils of counties for granting aid towards making, improving or maintaining any county or township boundary line.

(5) By the councils of counties for granting aid to the corporation of any town, village or township towards,

(*a*) Opening any new highway or constructing any new bridge in the municipality;

(*b*) Opening, widening, maintaining or otherwise improving any highway leading from or passing through the municipality into a county road, or constructing, maintaining or improving any bridge forming, or which is to form, part of such highway.

By townships to county.

(6) By the councils of townships,

(*a*) For granting aid to the corporation of a county adjoining that in which the township is situate towards opening, widening, maintaining or improving any highway lying between the township and another municipality in the adjoining county, or towards constructing, maintaining or improving any bridge on such highway;

(*b*) For granting aid for the like purposes to the corporation of the county in which the township is situate in respect of any highway or bridge within the township assumed as a county road or bridge or agreed to be so assumed on condition that such aid shall be granted.

By townships in unorganized territory.

(7) By the council of a township in unorganized territory for opening, widening, maintaining or improving any highway or constructing, maintaining or improving any bridge in an adjoining municipality or in a municipality situate in such adjoining municipality or in an adjoining unorganized township or in adjoining unsurveyed territory or for granting aid to any adjoining municipality or to any municipality situate in such adjoining municipality for any of such purposes.

(8) The aid may be granted by way of loan or otherwise. 3-4 Geo. V. c. 43, s. 482.

483. By-laws may be passed by the council of every municipality.

Boulevards.

1. For setting apart portions of the highways at or near the sides of them for the purpose of boulevards, and for permitting the owners of land abutting on a highway to construct, make and maintain at their own expense boulevards on that part of the highway which may be set apart for that purpose, but not so as unreasonably to confine, impede or incommode public traffic.

Regulations.

2. For regulating the construction, maintenance and protection of such boulevards.

Areas and openings under highways.

3. For permitting the owners of land to make, maintain and use areas under and openings to them in the highways and sidewalks, for

prescribing the terms and conditions upon which the same shall be made, maintained and used, and for making such annual or other charge for the privilege conferred by the by-law as the council may deem reasonable.

Annual charge for.

(*a*) Such annual or other charge shall be payable and payment of it may be enforced in like manner as taxes are payable and payment of them may be enforced.

Liability of corporation for damages.

(*b*) The corporation shall be liable for any want of repair of the highway which may result from the construction, maintenance and use of any such area or opening, but shall be entitled to the remedy over provided for by section 464 against the person by whose act or omission the want of repair is caused.

Bicycle and foot paths.

4. For setting apart so much of any highway as the council may deem necessary for the purposes of a bicycle path or of a foot path.

(*a*) Any person who rides or drives a horse or other beast of burden or a motor vehicle, wagon, carriage or cart over or along any such path shall incur a penalty of not less than $1 or more than $20.

Tolls on highways and bridges.

5. For raising money by toll on any highway, bridge or other work to defray the expense of making, maintaining or repairing it.

Granting right to take tolls.

6. For granting to any person in consideration or part consideration of planking, gravelling, or macadamizing a highway, or of building a bridge, the tolls fixed by by-law to be levied on the work for a period of not more than twenty-one years after the work has been completed, and after such completion has been declared by a by-law of the council.

(*a*) The grantee of the tolls shall, during such period, maintain and keep in repair the highway or bridge.

Selling timber on road allowance. Rev. Stat. c. 29.

7. Subject to the rights of a Crown timber licensee under *The Crown Timber Act*, for preserving or selling the timber or trees on any original allowance for road.

Regulations *re* pits, precipices, etc.

8. For making regulations as to pits, precipices and deep waters and other places dangerous to travellers.

Stone and gravel pits.

9. For acquiring either alone or jointly with the corporation of another municipality such land in either municipality as may be deemed necessary for procuring therefrom stone or gravel for use in making, maintaining or repairing the highways under the jurisdiction of the council or councils.

Power to enter upon land to take timber, gravel, etc.

10. For entering upon and searching for and taking from land within the municipality, or with the consent of the council of an adjacent municipality expressed by by-law or resolution from land in such municipality, such timber, gravel, stone or other material as may be necessary for constructing, maintaining and keeping in repair the highways and bridges.

Compensation—how determined.

(*a*) The compensation to be paid to the owners of and other persons interested in the land for the timber, gravel, stone or other material shall be agreed upon or determined by arbitration before the power to take it is exercised.

(*b*) The compensation may be a lump sum for the privilege of taking as much timber, stone, gravel or other material as may be required, or a sum determined by the quantity taken, or a price by the cubic yard or otherwise for what may be taken, as may be agreed on or be determined by the arbitrators.

(*c*) Where it is necessary in the exercise of any of the powers conferred by the by-law to pass through or over the land of another person, the corporation may do so as occasion may require, doing no unnecessary damage, but before doing so the compensation to be paid for the exercise of such power shall be agreed upon or determined by arbitration.

Purchasing or renting road-making machinery.

11. For purchasing conditionally, or otherwise, or for renting for a term of years or otherwise, roadmaking machinery and appliances for the purposes of the corporation, and for borrowing money for the purpose of paying the purchase price for any period not exceeding five years and for issuing debentures for the money so borrowed, or for issuing to the vendor debentures payable within that period in payment of the purchase money.

(*a*) The debentures issued under this paragraph shall be on the instalment plan. 3-4 Geo. V. c, 43, s, 483.

Taking stock in bridge company.

484. The council of every municipality may pass by-laws for subscribing for any number of shares in the capital stock of or for lending money to or guaranteeing the payment of any money borrowed by a bridge company incorporated or the purpose of erecting and maintaining any bridge within, or partly within, the municipality or between it and another municipality. 3-4 Geo. V. c. 43, s. 484.

Power to agree with owners of toll road as to the expenditure of statute labour thereon.

485. The council of every municipality through or adjoining which any toll road passes may enter into an agreement with the owner of the road to expend on it for a limited number of years such statute labour or sum of money as may be agreed upon and that at the end of the term of years agreed upon such road shall be toll free and shall become the property of the corporation of the municipality in which it is situate. 3-4 Geo. V. c. 43, s. 485.

486. The council of a local municipality may pass by-laws for entering into and performing any agreement with any other council in the same county for executing, at their joint expense and for their joint benefit, any work within the jurisdiction of the council. 3-4 Geo. V., c. 43, s. 486. Joint works with other municipalities.

Trees, Planting, Protection and Removal of.

487. The council of every municipality may pass by-laws

1. For causing any tree, planted or growing on any highway, square, lane or other public communication, to be removed if and when deemed necessary for any purpose of public improvement; but Removal of trees.

(*a*) The owner of the adjacent land shall be entitled to ten days' notice of the intention of the council to remove such tree, and to be recompensed for his trouble in planting and protecting it, but neither he nor the occupant of the land shall be entitled to any further or other compensation.

(*b*) Neither the owner of the adjacent land nor any pathmaster or other public officer, nor any other person, shall remove or cut down or injure any such tree without the express permission of the council.

2. For planting and preserving shade and ornamental trees upon any highway, and for granting to any person or association of persons money to be expended for such purposes. Planting trees.

3. For prohibiting the injuring or destroying of trees or shrubs on the highways, planted or preserved for shade or ornament. Ornamental trees.

4. For authorizing the Park Commissioner or any officer appointed for that purpose or a Committee of the Council to, Authority to plant, trim and cut down, etc., trees.

(*a*) Plant or cause to be planted trees in the highways of the municipality;

(*b*) Trim or cause to be trimmed all trees on private property the branches of which extend over a highway;

(*c*) Cut down or remove or cause to be cut down or removed all decayed trees;

(*d*) Remove or transplant or cause to be removed or transplanted any tree planted or growing in any highway, square, lane or other public communication after 48 hours' notice in writing to the occupant of the land opposite to which the tree is planted or growing, but no live tree, unless within 30 feet of another tree, shall be removed without the consent of such occupant.

Service of notice.

(1*a*) The notice mentioned in clause (*d*) may be given by leaving it with a grown-up person resident upon the land, or if the land is unoccupied by posting it in a conspicuous place on the land.

Non-liability for acts done.

(1*b*) Neither the corporation nor any person acting under the authority of a by-law for the purposes mentioned in this paragraph shall incur any liability by reason of anything done under the authority of the by-law if reasonable care, skill and judgment are exercised in the doing of it, nor shall the corporation be liable to make compensation to the owner or occupant of the land further than as provided by this section.

General powers not affected.

(1*c*) Nothing in this paragraph shall limit the powers conferred by paragraphs 1, 2 and 3. 3-4 Geo. V. c. 43, s. 487.

Cutting down trees on either side of highway.

488.—(1) The council of a county or a township may pass by-laws for requiring that on each or on either side of a highway or part of a highway which passes through a wood the trees, except such as are reserved by the owner for ornament or shelter, shall for a space not exceeding 25 feet from the limits of the highway or part of it be cut down and removed by the owner or occupant of the land within a time to be appointed by the by-law, and if he fails to do so, authorizing such person as may be named in the by-law to cut down and remove them.

Failure of owner or occupant to cut down, etc.

(2) Where the owner or occupant fails to cut down and remove such trees in accordance with the requirement of the by-law the person named in the by-law for that purpose may cut down and remove them, and the trees may be used for the construction, improvement or repair of any highway or bridge in the road division in which the land is situate or may be sold by him to defray the expenses incurred in carrying out the provisions of the by-law. 3-4 Geo. V. c. 43, s. 488.

Expenditure for works in any county of a union.

489.—(1) The councils of united counties may pass by-laws for raising or borrowing money to be expended exclusively in any one of the counties forming the union.

What members to vote on by-law.

(2) None of the members of the council but those representing local municipalities in the county in which the expenditure is to be made shall vote upon the by-law except in the case of an equality of votes, when the warden shall have the casting vote.

What property assessable for rates.

(3) The sums to be raised by taxation for the purpose of making any such expenditure and the sums required to be raised to pay the principal and interest of any money borrowed for that purpose shall be assessed and levied only upon the rateable property in the county in which the expenditure is to be made.

(4) Every debenture issued under the authority of the by-law shall be issued as the debenture of the corporation of the united counties, but it shall be stated in the body of it that the payment of the principal and interest is to be provided for by a special rate upon the rateable property in the county in which the expenditure is to be made and upon that property only. 3-4 Geo. V. c. 43, s. 489. Debentures, issue of.

490. The council of a township may pass by-laws for granting a prize not exceeding $10 for the best kept roadside, farm front and farm house surroundings, in each public school section in the township, and for prescribing the conditions upon which such prizes may be competed for and awarded. 3-4 Geo. V. c. 43, s. 490. Prizes for best kept roadside, etc.

491. The councils of all municipalities may pass by-laws

1. For prohibiting or regulating the obstructing, encumbering, injuring or fouling of highways or bridges: Obstruction of highways.

2. For requiring doorsteps, porches or other erections or things projecting into or over any highway to be removed by the owner or occupant of the land in connection with which they exist. Removal of doorsteps, etc.

3. For prohibiting the building or maintaining of fences on any highway or the placing or depositing of firewood or any other thing calculated to obstruct it or to obstruct or interfere with public travel on it, on any highway or bridge, and for requiring the removal of them by the person by whom the same are or were so built, maintained, placed or deposited. Prohibiting building or maintaining fences on highways.

   (*a*) Unless the by-law otherwise provides, a by-law passed under the authority of paragraph 3 shall not extend or apply to a worm fence which is not for more than half its width upon the highway, or to materials to be used for the construction or repair of a highway or bridge, if they do not interfere with the use of it or public travel. Worm fences.

4. For prohibiting the throwing, placing or depositing on any highway or bridge of dirt, filth, glass, handbills, paper, or other rubbish or refuse, or the carcass of any animal. 3-4 Geo. V. c. 43, s. 491. Prohibiting throwing dirt, glass, etc., on highways.

492.—(1) Where a highway for the site of which compensation was paid has heretofore or shall hereafter be established and laid out in place of the whole or any part of an original allowance for road, or where the whole or any part of a highway has heretofore been or shall hereafter be legally stopped up, if the council determines to sell such original allowance or such stopped up highway, the price at which it is to be sold shall be fixed by the council, and the owner of the land which Selling original road allowance.

abuts on it shall have the right to purchase the soil and freehold of it at that price.

Prior right of owners of abutting lands.

(2) Where there are more owners than one, each shall have the right to purchase that part of it upon which his land abuts, to the middle line of the stopped up highway.

Sale by council to other persons.

(3) If the owner does not exercise his right to purchase within such period as may be fixed by the by-law or by a subsequent by-law, the council may sell the part which he has the right to purchase to any other person at the same or a greater price. 3-4 Geo. V. c. 43, s. 492.

Where owner of land taken for highway entitled to original road allowance.

493.—(1) Where a highway for the site of which compensation was not paid has been laid out and opened in the place of the whole or any part of an original allowance for road, the owner of the land appropriated for the highway or his successor in title if he owns the land which abuts on such allowance shall be entitled to the soil and freehold of it, and if it has not already been conveyed to him or his predecessor in title, to a conveyance of it.

Where more than one owner.

(2) Where the land which so abuts is owned by more persons than one each shall be entitled to and to a conveyance of the soil and freehold of that part of the allowance upon which his land abuts to the middle line of the allowance.

Where owner of land taken owns no land abutting on allowance.

(3) If the owner of the land appropriated for the highway or his successor in title does not own any land abutting on the allowance and the allowance is sold by the council, he shall be entitled to a part of the purchase money which bears the same proportion to the whole purchase money as the value of the part of the site of the new highway which belonged to him bears to the value of the whole site. 3-4 Geo. V. c. 43, s. 493.

When person in possession entitled to original allowance.

494.—(1) A person in possession of the whole or any part of an original allowance for road in place of which he or any of his predecessors in title has laid out and opened a new road or street without receiving compensation for the site of it, shall be entitled to the soil and freehold of such allowance or part of it, and if it has not already been conveyed to him or to his predecessor in title to a conveyance of it.

Where several persons in possession.

(2) Where there are more persons than one in such possession each shall be entitled to a conveyance of the soil and freehold of that part of the allowance upon which his land abuts to the middle line of the allowance.

Requirement as to assumption of road by corporation.

(3) If the road has not been adopted by by-law of the council or otherwise assumed for public use by the corporation, this section shall not apply until the new road or street is adopted by by-law of the council, and the council by by-law declares that the original allowance is in its opinion useless to the public.

(4) This section shall apply to roads and to streets hereafter laid out and opened and to such as have been heretofore laid out and opened. 3-4 Geo. V. c. 43, s. 494. Application of section.

495. Stone, gravel or other material shall not be put on any highway for the purpose of rebuilding or repairing it during the winter months so as to interfere with the use of sleighs, unless another convenient highway is provided while the rebuilding or repairing is being done. 3-4 Geo. V. c. 43, s. 495. Stone or gravel on roads during sleighing.

496.—(1) The Lieutenant-Governor in Council may stop up, alter, widen or divert any highway or part of a highway in a Provisional Judicial District not being within an organized municipality, and may sell or lease the soil and freehold of any such highway or part of a highway which he has stopped up or which in consequence of an alteration or diversion of it no longer forms part of the highway as altered or diverted. Stopping up highways in unorganized territory.

(2) The council of a township in unorganized territory surveyed without road allowances but in which 5 per cent. of the area is reserved for highways, may pass by-laws for opening and making highways where necessary and the provisions of this Act as to compensation for lands taken or injuriously affected by the exercise of the powers conferred by this section shall not apply. 3-4 Geo. V. c. 43, s. 496. Opening up highways where five per cent. reserved.

(3) In cases of deviations from road allowances and of roads laid out where there are no road allowances as provided in subsection 2, the corporation shall cause a plan thereof, so far as the same affects unpatented lands of the Crown, to be made by an Ontario land surveyor and shall file the same in the Department of Lands, Forests and Mines. 61 Vict. c. 26, s. 3. Filing plan of roads in Department of Lands, Forests and Mines.

AN ACT RESPECTING LOCAL IMPROVEMENTS.

R.S.O., 1914, c. 193

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

Short title.

1. This Act may be cited as *The Local Improvement Act.* 2 Geo. V. c. 44, s. 1.

INTERPRETATION.

Interpretation.

2. In this Act:—

"Bridge."

(*a*) "Bridge" shall include a viaduct, a culvert, a subway and an embankment and shall also include a pavement on a bridge.

"Clerk."

(*b*) "Clerk" shall mean and include the clerk of the municipality and any officer or person authorized or required by the council to perform any duty which under this Act is to be or may be performed by the clerk.

"Constructing." "Construction."

(*c*) "Constructing" and "construction" shall include reconstructing and reconstruction, wholly or in part, when the lifetime of the work has expired. 1 Geo. V. c. 58, s. 2 (*a-c*).

"Corporation."

(*d*) "Corporation" shall mean the corporation of a municipality. 3-4 Geo. V. c. 44, s. 1, (1).

"Corporation's portion of the cost."

(*e*) "Corporation's portion of the cost" shall mean that part or proportion of the cost of a work which is not to be specially assessed, but is payable by the corporation. 1 Geo. V. c. 58, s. 2, (*e*).

"Council."

(*f*) "Council" shall mean the council of the corporation of a municipality. 3-4 Geo. V. c. 44, s. 1, (*e*).

"County."

(*g*) "County" shall include "district." 1 Geo. V. c. 58, s. 2, (*g*).

"Curbing."

(*h*) "Curbing" shall include a curbing of any material in or along a street, whether constructed in connection with or apart from the laying down of a pavement or sidewalk, or with or without a projection for the purpose of a gutter.

"Engineer."

(*i*) "Engineer" shall include an officer or person authorized or required by the council to perform any duty which under this Act is to be or may be performed by an engineer.

"Frontage."

(*j*) "Frontage" when used in reference to a lot abutting directly on a work shall mean that side or limit of the lot which abuts directly on the work.

(*k*) "Judge of the County Court" shall mean and include the judge and a junior judge of a county or district court. "Judge of the County Court."

(*l*) "Lifetime" as applied or applicable to a work shall mean the lifetime of the work as estimated by the engineer, or in case of an appeal as finally determined by the Court of Revision or the judge, as the case may be. "Lifetime."

(*m*) "Lot" shall mean a subdivision or a parcel of land which by *The Assessment Act* is required to be separately assessed, and "lots" shall mean more than one lot as so defined. 1 Geo. V. c. 58, s. 2, (*i-n*). "Lot."

(*n*) "Municipality" shall include a union of townships, a municipality composed of more than one township, a township, a city, a town, a village, but not a county. 1 Geo. V. c .58, s. 2, (*o*); 3-4 Geo. V. c. 44, s. 1, (4). "Municipality."

(*o*) "Owner" and "owners" shall mean respectively the person or persons appearing by the last revised assessment roll of the municipality to be the owner or owners of land, and, except in the case of a township, shall include a tenant for years, the unexpired term of whose tenancy including any renewal thereof to which he is entitled extends for not less than the period during which the special assessment for the work is to be made, if by the terms of his tenancy he would be liable for the payment of the special assessment for the work, but shall not include a person who is, or is assessed as, owner, where there is a tenant for years of the land, who is an owner within the meaning of this clause. "Owner." "Owners."

(*p*) "Owners' portion of the cost" shall mean that part or proportion of the cost of a work which is to be specially assessed upon the land abutting directly on the work or upon land immediately benefited by the work. "Owners' portion of the cost."

(*q*) "Pavement" shall include any description of pavement or roadway. "Pavement."

(*r*) "Paving" shall include macadamizing, planking, and the laying down or construction of any description of pavement or roadway and the construction of a curbing. "Paving."

(*s*) "Publication" and "published" shall mean insertion in a newspaper published in the municipality, if there is a newspaper published therein, or, if there is none, then in a newspaper published in the county in which the municipality is situate. "Publication." "Published."

"Sewer." (*t*) "Sewer" shall include a common sewer and a drain.

"Sidewalk." (*u*) "Sidewalk" shall include a footway and a street crossing.

"Specially assessed." (*v*) "Specially assessed" shall mean specially rated for or charged with part of the cost of a work.

"Street." (*w*) "Street" shall include a lane, an alley, a park, a square, a public drive, and a public place, or a part of any of them.

"Value." (*x*) "Value" shall mean assessed value, exclusive of buildings, according to the last revised assessment roll of the municipality.

"Work." (*y*) "Work" shall mean a work or service which may be undertaken as a local improvement.

"Work undertaken." (*z*) "Work undertaken" shall mean a work which is undertaken as a local improvement. 1 Geo. V. c. 58, s. 2, (*p-aa*).

WORKS WHICH MAY BE UNDERTAKEN AS LOCAL IMPROVEMENTS.

Works which may be effected as local improvements.

3.—(1) A work of any of the characters or descriptions hereinafter mentioned may be undertaken by the council of a corporation as a local improvement, that is to say:

(*a*) Opening, widening, extending, grading, altering the grade of, diverting or improving a street;

(*b*) Opening or establishing a new street;

(*c*) Constructing a bridge as part of a street;

(*d*) Constructing, enlarging, or extending a sewer;

(*e*) Paving a street;

(*f*) Constructing a curbing or a sidewalk in, upon or along a street;

(*g*) Constructing or maintaining a boulevard where a part of a street has been set apart for the purposes of a boulevard;

(*h*) Sodding any part of and planting, maintaining and caring for trees, shrubs and plants upon and in a street;

(*i*) The extension of a system of water, gas, light, heat or power works owned by the corporation, including all such works as may be necessary for supplying water, gas, light, heat or power to the owners of land, for whose benefit such extension is provided.

(*j*) Acquiring, establishing, laying out and improving a park or square not having a greater area than two acres, or a public drive.

(*k*) Constructing, on petition only, retaining walls, dykes or breakwaters along the banks of rivers, but this clause shall only apply to a city or town. 1 Geo. V. c. 58, s. 3, (1).

(1) In the case of cities and towns only, constructing and erecting on petition only, on any street or part of a street, equipment, plant and works for the purpose of supplying electric light or power, including standards and underground conduits and wires, to the extent to which the cost of the same exceeds the cost of the equipment, plant and works which would otherwise be provided at the expense of the corporation at large. 2 Geo. V. c. 44, s. 2; 3-4 Geo. V. c. 44, s. 2.

(2) Nothing in this section shall extend or apply to a work of ordinary repair or maintenance.

What works may be undertaken in connection with a sewer or pavement.

4.—(1) Where the work is the construction of a pavement, the Council, before constructing it, may make all necessary private drain connections from an existing sewer to the street line on either or both sides, and may also lay all necessary water mains and, where gas works are owned by the Corporation, all necessary gas mains, and make such alterations or renewals of water service pipes and stopcocks, and, where gas works are owned by the Corporation, of gas connections as are necessitated by the work, and, where the work is the construction of a sewer, the Council may make all necessary private drain connections to the street line on either or both sides; but the cost of a private drain connection, alteration or renewal of a water service pipe, stopcock or gas connection shall be specially assessed only upon the particular lot for or in connection with which it was constructed or effected.

To be part of work of construction.

(2) The works mentioned in subsection 1 shall be deemed part of the work of construction of the pavement or sewer in all respects except as to the manner in which the cost of them is to be specially assessed as provided by that subsection.

How to be assessed.

(3) The amount to be assessed against each lot in respect of a private drain connection, water service pipe or gas connection shall be the cost thereof from the centre of the street to the street line, whether or not the sewer or water or gas main is laid in the centre of the street. 1 Geo. V. c. 58, s. 4.

Construction of private drain connections without petition.

5. Where a sewer has been or may hereafter be constructed, the Council, by a vote of two-thirds of all the members thereof at any general or special meeting, may undertake the construction of private drain connections from the sewer to the street line on either or both

sides as a local improvement without any petition therefor, and the cost of each private drain connection shall be specially assessed upon the particular lot for or in connection with which it is constructed, and the owners of the land shall not have the right of petition provided for by section 13, and the provisions of subsection 3 of section 4 shall apply. 1 Geo. V. c. 58, s. 5.

Purchase by township of works already constructed.

6. In a township where the owners of land have constructed a work which might have been undertaken as a local improvement, the Council, upon the petition of three-fourths in number of the owners of the land to be immediately benefited by the acquisition of the work, representing at least two-thirds of the value of such land, may acquire the work at a price agreed upon or to be determined by arbitration under the provisions of *The Municipal Act,* and the purchase money may be provided by the Council and may be assessed in like manner as if the work were a work which the Council were undertaking as a local improvement, and all the provisions of this Act shall apply as if the Council were undertaking the work so acquired as a local improvement. 1 Geo. V. c. 58, s. 6.

Approval of Ont. Ry. and Municipal Bd. required in the case of certain works.

7.—(1) Where the work is the opening, widening, or extension of a street or the construction of a bridge, and the cost of the work as estimated by the engineer will exceed $50,000, any person whose land is to be specially assessed may, within ten days after notice to him of the intention of the Council to undertake the work, give notice that he objects to the work being undertaken upon the ground that it is a work for the general benefit of the municipality or of a section or district thereof, and if such notice is given the work shall not be undertaken without the approval of "The Ontario Railway and Municipal Board."

Approval may be withheld.

(2) If the Board, after notice to the corporation and to all persons interested and after hearing such of them as shall request to be heard, determines that for the reasons mentioned in subsection 1, or either of them, it is proper to do so the Board may withhold its approval.

Apportionment of cost of work.

(3) If the Board determines that the cost of the work should be borne by the corporation or by the owners of the land situate within a section or district of the municipality, the Board may make an order so declaring, and in that event the Council may, notwithstanding the provisions of this Act or of any by-law passed under the authority of this Act, undertake and proceed with the work at the cost of the corporation or of the section or district thereof mentioned in the order, as the case may be.

Or may direct the cost to be charged upon the abutting lots.

(4) The Board, instead of making an order under subsection 3, may direct that if the work is undertaken such part of the cost of it as the Board may deem just shall be charged upon the lots abutting directly upon the work, in accordance with the provisions of this Act and that the residue of it shall be borne by the corporation or partly by

the corporation and partly by a section or district of the municipality in such proportions as the Board may direct, and if the Council undertakes the work, it shall conform with the directions of the order so made.

(5) The special assessment upon the lots shall not be made by the Board, but by the Council, in accordance with the provisions of this Act. 1 Geo. V. c. 58, s. 7

Special assessments to be made by the Council.

Procedure for Undertaking Work.

8.—(1) A by-law may be passed for undertaking a work as a local improvement.

Methods of undertaking works.

(*a*) On petition, or

(*b*) Without petition, on the initiative of the Council, hereinafter called the initiative plan, except in the case of a park or square or public drive mentioned in clause (*j*) of secion 3, or

(*c*) On sanitary grounds, as mentioned in section 10, or

(*d*) Without petition in the case mentioned in sections 5 and 9.

(2) Instead of passing separate by-laws for each work the Council may pass one by-law in respect of several works. 1 Geo. V. c. 58, s. 8.

One by-law may include several works.

9. Notwithstanding anything to the contrary contained in this or any other Act or in any by-law of the municipality, where the Council determines and by by-law, passed at any general or special meeting by a vote of two-thirds of all the members thereof, declares that it is desirable that the construction of a curbing, pavement, sidewalk, sewer, or bridge, or the opening, widening, extending, grading, altering the grade of, diverting or improving a street or the extension of a system of waterworks, should be undertaken as a local improvement, the Council may undertake the work without petition, and the owners of the land shall not have the right of petition provided for by section 13. 1 Geo. V. c. 58, s. 9, (1); 2 Geo. V. c. 44, s. 3; 3-4 Geo. V. c. 44, s. 3.

Construction of certain works on a two-thirds vote of council without petition.

10. Where the Council, upon the recommendation of the Provincial Board of Health or of the Local Board of Health of the municipality, determines and by by-law passed at a regular or special meeting of the Council by a vote of two-thirds of all the members thereof, declares that the construction, enlargement or extension of a sewer as a local improvement is necessary or desirable in the public interest on sanitary grounds, the Council may undertake the work without petition, and the owners of the land shall not have the right of petition provided for by section 13. 1 Geo. V. c. 58, s. 10.

Construction of sewer on recommendation of Board of Health.

Publication of notice of intention.

11. Where it is intended to proceed under sections 5, 9 or 10 the Council shall not be deemed to proceed on the initiative plan, but, before passing the by-law for undertaking the work, shall cause notice of its intention, Form 1, to be published. 1 Geo. V. c. 58, s. 11.

Number of signatures to petition required.

12. The petition for a work shall be signed by at least two-thirds in number of the owners representing at least one-half of the value of the lots liable to be specially assessed. I Geo. V. c. 58, s. 12.

Initiative plan—publication and service of notice of intention to construct work.

13.—(1) Where the Council proceeds on the initiative plan, notice of the intention of the Council to undertake the work, Form 2, shall be given by publication of the notice and by service of it upon the owners of the lots liable to be specially assessed; and unless within one month after the first publication of the notice a majority of the owners representing at least one-half of the value of the lots which are liable to be specially assessed petition the Council not to proceed with it, the work may be undertaken as a local improvement.

Contents of notice.

(2) The notice shall be sufficient if it designates by a general description the work to be undertaken and the street or place whereon or wherein, and the points between which the work is to be effected, and the number of the instalments by which the special assessment is to be payable.

May cover different works.

(3) The notice may relate to and include any number of different works. 1 Geo. V. c. 58, s. 13, (1-3).

Manner of service.

(4) The notice may be served upon the owner

(*a*) Personally, or

(*b*) By leaving it at his place of business or of residence if within the municipality, or

(*c*) By mailing it at a post office addressed to the owner at his actual place of business or of residence, if known, or at his place of business or residence as set forth in the last revised assessment roll of the municipality, or

(*d*) If the place of business and of residence of the owner are not known, by leaving the notice with a grown-up person on the lot of the owner which is liable to be specially assessed, if there is a grown-up person residing thereon. 1 Geo. V. c. 58, s. 13 (4); 2 Geo. V. c. 44, s. 5.

Where etc., unknown.

(5) If the place of business and of residence of the owner are unknown, and there is no grown-up person residing on the lot of the owner which is liable to be specially assessed, service upon the owner shall not be requisite.

(6) If the place of business or of residence of the owner do not appear upon the assessment roll, the owner may be treated and dealt with as an owner whose place of business and of residence are unknown. Where residence, etc., is not in assessment roll.

(7) Publication and service of the notice may be proved by affidavit or statutory declaration and the affidavit or statutory declaration, before the passing of the by-law by which the special assessment is made to defray the cost of the work, shall be *prima facie* evidence, and after the passing of the by-law shall be conclusive evidence of the matters set forth in the affidavit or statutory declaration. 1 Geo. V. c. 58, s. 13, (5-7). Proof of publication and service.

14.—(1) Where the Council has proceeded on the initiative plan and has been prevented from undertaking a work by reason of a petition having been presented under the provisions of section 13, the Council shall not proceed on the initiative plan with regard to the same work for the period of two years after the presentation of the petition: Provided always that in a municipality in which a by-law passed under the provisions of section 52 is in force the prohibition contained in this section shall not prevent the Council from again proceeding on the initiative plan with regard to such work if it is of a different kind of description from or less expensive than that originally proposed to be undertaken. Effect of petition against work. Proviso.

(2) Nothing in this section shall prevent the Council from exercising the power conferred by section 9. 1 Geo. V. c. 58, s. 14. Powers conferred by section 9 not affected.

15. There shall be set out opposite to every signature to the petition for or against a work a description of the lot of which the petitioner is the owner by its number or such other description as will enable the clerk to identify it. 1 Geo. V. c. 58, s. 15. Lot of petitioner to be described.

16.—(1) The sufficiency of a petition for or against a work shall be determined by the clerk, and his determination shall be evidenced by his certificate and when so evidenced shall be final and conclusive. Clerk to determine sufficiency of petition.

(2) Where the sufficiency of a petition has been determined by the clerk it shall be deemed to have been and to be a sufficient petition notwithstanding that changes may be made by the Court of Revision or by the Judge in the lots to be specially assessed which have the effect of increasing or reducing the number of the lots. What owners to be counted.

(3) When it is necessary to determine the value of any lot and the same cannot be ascertained from the proper assessment roll by reason of the lot not having been separately assessed, or for any other reason, the clerk shall fix and determine the value of such lot and the value thereof as so fixed and determined shall be deemed for the purpose of this Act to be the assessed value thereof, and his determination shall be final and conclusive. *New. See* 3 Edw. VII. c. 19, s. 669 (3). Determining value of lots.

Owner whose name is not on roll may petition.

(4) Where a person who is, but does not appear by the last revised assessment roll of the municipality to be, the owner of land is a petitioner, he shall be deemed an owner if his ownership is proved to the satisfaction of the clerk, and if the person who appears by the assessment roll to be the owner is a petitioner his name shall be disregarded in determining the sufficiency of the petition.

Case of joint owners.

(5) Where two or more persons are jointly assessed for a lot, in determining the sufficiency of a petition

(*a*) They shall be reckoned as one owner only;

(*b*) They shall not be entitled to petition unless a majority of them concur and the signatures of any of them, unless the petition is signed by the majority, shall be disregarded in determining the sufficiency of the petition.

Witnesses.

(6) The clerk, for the purpose of any inquiry pending before him under the provisions of this section, may cause witnesses to be summoned and to be examined upon oath, and any person interested in the inquiry may, for the purpose of procuring the attendance of a witness, cause a subpœna to be issued out of the County Court of the County in which the municipality lies.

Witness fees.

(7) A witness, if a resident of the municipality, shall be bound to attend without payment of any fees or conduct money, and if not a resident of the municipality shall be entitled to fees and conduct money according to the County Court scale.

Complaints to be investigated by county judge.

(8) Where any person complains to the Clerk that his signature to the petition was obtained by fraud, misrepresentation or duress the complaint shall be investigated and determined by a Judge of the County Court, and the Clerk shall delay certifying until he has received the finding or report of the Judge upon the complaint, and in determining as to the sufficiency of the petition the Clerk shall give effect to such finding or report. 1 Geo. V. c. 58, s. 16.

Petitions to be lodged with clerk.

17. A petition for or against the undertaking of a work shall be lodged with the Clerk, and shall be deemed to be presented to the Council when it is so lodged. 1 Geo. V. c. 58, s. 17.

Withdrawal of name from petition.

18. No person shall have the right to withdraw his name from, and no name shall be added to, a petition after the Clerk has certified as to its sufficiency. 1 Geo. V. c. 58, s. 18.

How Cost of Work to be Borne.

Frontage rate.

19.—(1) Except as in this Act is otherwise expressly provided, the entire cost of a work undertaken shall be specially assessed upon the lots abutting directly on the work, according to the extent of their respective frontage thereon, by an equal special rate per foot of such frontage sufficient to defray such cost.

(2) The following may be included in the cost of the work: Items which may be included in cost.

(*a*) Engineering expenses.

(*b*) Cost of advertising and service of notices.

(*c*) Interest on temporary loans.

(*d*) Compensation for lands taken for the purposes of the work or injuriously affected by it and the expenses incurred by the Corporation in connection with determining such compensation.

(*e*) The estimated cost of the issue and sale of debentures and any discount allowed to the purchasers of them. 1 Geo. V. c. 58, s. 19.

20. Where a contractor is employed to construct a pavement or sidewalk, and the council has required him to guarantee that he will so construct it that it shall, for a period not exceeding ten years, remain in good condition and suitable for safe and comfortable travel, and that he will, when required, make good any imperfections therein due to materials, workmanship or construction, in ascertaining the cost of the work no deduction shall be made from the sum paid to the contractor by reason of such guarantee having been required. 1 Geo. V. c. 58, s. 20. Guarantee of work.

21. There shall be included in the corporation's portion of the cost:— Corporation's portion of cost.

(*a*) At least one-third of the cost of a sewer having a sectional area of more than four feet; and

(*b*) The entire cost of all culverts and other works in connection with a sewer or pavement which are provided and are required for surface drainage; and

(*c*) So much of the cost of a work as is incurred at street intersections. 1 Geo. V. c. 58, s. 21.

22.—(1) Where the work is the construction of a sewer the Council may, by a vote of three-fourths of all the members, provide that a certain sum per foot frontage shall be specially assessed upon the land abutting directly on the work, and that the remainder of the cost of such sewer shall be borne by the corporation. Apportionment of cost of sewers.

(2) The part of the cost to be borne by the corporation shall not be less than that which, under section 21, is to be included in the corporation's portion of the cost. 1 Geo. V. c. 58, s. 22.

Corporation may assume part of cost of sidewalk or pavement.

23.—(1) The Council of the corporation of a municipality in which there is not in force a by-law passed under the provisions of section 51 applicable to the work, may by by-law passed at any general or special meeting by a vote of three-fourths of all the members of the Council, provide that such part as to the Council may seem proper of the cost of every granolithic, stone, cement, asphalt or brick sidewalk, or of every pavement or curbing constructed as a local improvement which otherwise would be chargeable upon the land abutting directly on the work shall be paid by the corporation.

By-law not to be repealed except by three-fourths vote.

(2) Such by-law shall not be repealed except by a vote of three-fourths of all the members of the Council. 1 Geo. V. c. 58, s. 23.

Reduction of assessment of corner lots, etc.

24.—(1) In the case of corner lots and triangular or irregularly shaped lots situate at the junction or intersection of streets a reduction shall be made in the special assessment which otherwise would be chargeable thereon, sufficient, having regard to the situation, value and superficial area of such lots as compared with the other lots, to adjust the assessment on a fair and equitable basis.

Of lots unfit for building purposes.

(2) Where a lot is for any reason, wholly or in part, unfit for building purposes, a reduction shall also be made in the special assessment which otherwise would be chargeable thereon, sufficient to adjust its assessment as compared with that of the lots fit for building purposes on a fair and equitable basis.

How reduction to be made.

(3) The reduction shall be made by deducting from the total frontage of the lot liable to the special assessment so much thereof as is sufficient to make the proper reduction, but the whole of the lot shall be charged with the special assessment as so reduced.

Reduction to be borne by corporation.

(4) The amount of any reduction made in the assessment of any lot under the provisions of this section shall not be chargeable upon the lots liable to be specially assessed, but shall be paid by the corporation. 1 Geo. V. c. 58, s. 24.

Assessment of cost of sidewalk or curb.

25. Where the work undertaken is a sidewalk or curbing, only the land abutting on that side of the street upon which the work is constructed shall be specially assessed. 1 Geo. V. c. 58, s. 25.

Assessment of non-abutting land for cost of certain sewers.

26.—(1) Where the work is a sewer and in order to afford an outlet for the sewage for any land not abutting directly on the work or for the drainage of it the sewer is of a larger capacity than is required for the purpose of the abutting land, such other land may be specially assessed for a fair and just proportion of the cost of the work.

Method of assessment.

(2) In the cases provided for by subsection 1, that part of the cost of the work for which the abutting land is to be specially assessed shall be assessed upon it in the manner provided by section 19, and that part of the cost for which such other land is to be specially assessed shall be assessed upon it in the manner provided by sections 28 and 29. 1 Geo. V. c. 58, s. 26.

Apportionment of cost of a bridge or the opening, etc., of a street.

27.—(1) Where the work is the construction of a bridge or the opening, widening, extending, grading, altering the grade of, diverting or improving a street, and the Council is of opinion that for any reason it would be inequitable to charge the cost of the work on the land abutting directly thereon, the Council may provide for the payment by the corporation of such part of the cost as to the Council may seem just, and so much of the residue thereof as may seem just may be specially assessed upon the land abutting directly on the work, and so much of such residue as may seem just on such other land as is immediately benefited by the work.

Method of assessment.

(2) In the cases provided for by subsection 1, that part of the cost of the work for which the abutting land is to be specially assessed shall be assessed thereon in the manner provided by section 19, and that part of the cost for which land not abutting directly on the work is to be specially assessed shall be assessed thereon in the manner provided by sections 28 and 29. 1 Geo. V. c. 58, s. 27.

Assessment of non-abutting land equally benefited.

28. Where land not abutting directly upon a work is to be specially assessed, if the whole of it is equally benefited the portion of the cost to be borne by such land shall be specially assessed upon the lots according to the extent of their frontage by an equal special rate per foot of such frontage. 1 Geo. V. c. 58, s. 28.

Assessment of non-abutting land unequally benefited.

29. Where land not abutting directly upon a work is to be specially assessed, and the whole of it is not equally benefited, such land shall be divided into as many districts or sections as there are different proportions of benefit and so that a district or section shall embrace all the land which will be benefited in the same proportion, and its proper portion of the cost shall be assigned to each district or section and the portion of the cost to be borne by each district or section shall be specially assessed on the lots therein according to the extent of their frontage by an equal special rate per foot of such frontage. 1 Geo. V. c. 58, s. 29.

Procedure for Making Special Assessment.

Where all of owner's portion assessed on abutting land.

30.—(1) Where the owners' portion of the cost is to be specially assessed upon the lots abutting directly on the work by an equal special rate per foot frontage, before passing the by-law for undertaking it the Council shall procure to be made:

(*a*) A report as to the lifetime of the work;

(*b*) A report as to the reductions, if any, which ought to be made under the provisions of section 24 in respect of any lot and the aggregate amount of such reductions;

(*c*) An estimate of the cost of the work;

(*d*) A statement of the share or proportion of the cost which should be borne by the land abutting directly on the work and by the corporation respectively;

(*e*) A report as to the number of instalments by which the special assessment should be made payable;

Where part of owner's portion assessed on non-abutting land.

(2) In the case of a work part of the owners' portion of the cost of which may be specially assessed on land not abutting directly on the work, before passing the by-law for undertaking the work, in addition to procuring the reports and estimate mentioned in subsection 1, the Council shall procure to be made a further report stating:

(*a*) Whether it would be inequitable to charge the whole of the owners' portion of the cost on the land abutting directly on the work;

(*b*) If inequitable to do so, what portion of the cost should be borne by the corporation, what portion thereof should be specially assessed upon the land abutting directly on the work and what land not abutting directly on the work will be immediately benefited and should be specially assessed for any part of the cost and the portion of the cost which should be specially assessed upon it. 1 Geo. V. c. 58, s. 30.

Special assessment roll to be prepared.

31. Before a special assessment is imposed, the Council shall procure to be made a special assessment roll, in which shall be entered

(*a*) Every lot to be specially assessed in respect of the owners' portion of the cost, the name of the owner and the number of feet of its frontage to be so assessed;

(*b*) Every lot which, but for the provisions of section 48, would be exempt from the special assessment and the number of feet of its frontage;

(*c*) The rate per foot with which each lot is to be so assessed;

(*d*) The number of instalments by which the special assessment is to be payable. 1 Geo. V. c. 58, s. 31.

How reports, statements, etc., to be made.

32. The Council may provide for the making of the reports, statements, estimates and special assessment roll mentioned in sections 30 and 31 in such manner and by such officer of the corporation or person as the Council may deem proper, and may do so by a general by-law applicable to all works or to any class or classes of them or by a by-law applicable to the particular work. 1 Geo. V. c. 58, s. 32.

Holding of Court of Revision.

33.—(1) Before a special assessment is imposed a sittings of the Court of Revision. for the hearing of complaints against the proposed special assessment, shall be held.

(2) Ten days' notice of the time and place of the sittings shall be given by publication, and at least fifteen days before the day appointed for the sittings a notice, Form 3, shall be mailed to the owner of every lot which is to be specially assessed. 1 Geo. V. c. 58, s. 33. Time and place of.

34. The special assessment roll shall be kept open for inspection at the office of the clerk for at least ten days next before the day appointed for the sittings of the Court of Revision. 1 Geo. V. c. 58, s. 34. Special assessment roll to be kept open for ten days.

35. A statement showing under appropriate heads the actual cost of the work, verified by the certificate of the Clerk, Assessment Commissioner or Treasurer of the municipality shall be delivered to the Chairman of the Court of Revision before the meeting of the Court. 1 Geo. V. c. 58, s. 35. Statement of cost of work for Court of Revision.

36.—(1) The Court of Revision shall have jurisdiction and power to review the proposed special assessment and to correct the same as to all or any of the following matters: Powers of Court.

(*a*) Where the owners' portion of the cost is to be specially assessed against the land abutting directly on the work, as to the following matters:

(i.) The names of the owners of the lots;

(ii.) The frontage or other measurements of the lots;

(iii.) The amount of the reduction to be made under the provisions of section 24 in respect of any lot;

(iv.) As to the lots which, but for the provision of section 48, would be exempt from special assessment,

(v.) As to the lifetime of the work; and

(vi.) As to the rate per foot with which any lot is to be specially assessed.

(*b*) Where part of the owners' portion of the cost is to be specially assessed on land not abutting directly on the work, in addition to the matters mentioned in clause (*a*), as to the lots other than those abutting directly on the work which are or will be immediately benefited by it, and as to the special assessment which such lots should respectively bear.

(*c*) In all cases as to the actual cost of the work.

(2) The Court of Revision shall not have jurisdiction or authority to review or to alter the proportions of the cost of the work which the lands to be specially assessed and the corporation are respectively to No power to alter proportions of cost.

bear according to the provisions of the by-law for undertaking the work. 1 Geo. V. c. 58, s. 36.

Adjourned sittings of Court in case of omission to assess certain lots.

37.—(1) Where it appears to the Court of Revision that any lot which has not been specially assessed should be specially assessed, before finally determining the matter the Court shall adjourn its sittings to a future day and shall cause notice, Form 3, to be given to the owner of such lot of the time and place when the adjourned sittings will be held.

Time for mailing notice.

(2) The notice shall be mailed at least six days before the time fixed for the adjourned sittings.

Power to fix special assessment of lots.

(3) If the Court of Revision determines that any such lot ought to be specially assessed, the Court shall have jurisdiction and power to fix and determine the amount of the special assessment thereon. 1 Geo. V. c. 58, s. 37.

When special assessment roll to be final.

38. The clerk shall make such corrections in the special assessment roll as are necessary to give effect to the decisions of the Court of Revision, and the roll when so corrected shall be certified by the clerk, and when so certified, except in so far as it may be further amended on appeal to the Judge, such assessment roll and the special assessment shall be valid and binding upon all persons concerned and upon the land specially assessed, notwithstanding any defect, error or omission therein or any defect or error in the by-law for undertaking the work or in any notice given or proceeding taken or the omission of any proceeding or thing which ought to have been taken or done before the passing of the by-law for undertaking the work or thereafter down to and including the completion of such revision. 1 Geo. V. c. 58, s. 38.

Appeal to County Judge.

39.—(1) The Council or the owner of a lot specially assessed may appeal to the Judge of the County Court from any decision of the Court of Revision.

Application of Rev. Stat. c. 195.

(2) The provisions of *The Assessment Act* as to appeals to the Judge shall apply to an appeal under the provisions of subsection 1.

Powers of judge.

(3) The Judge shall have the like jurisdiction and powers as are conferred on the Court of Revision by section 36, and the provisions of section 37 shall apply where it appears to the Judge that any lot not specially assessed ought to be so assessed. 1 Geo. V. c. 58, s. 39.

Borrowing Powers.

Temporary loans.

40.—(1) The Council may agree with any bank or person for temporary advances to meet the cost of the work pending the completion of it.

(2) The Council may, when the work undertaken is completed, borrow on the credit of the corporation at large such sums as may be necessary to defray the cost of the work undertaken, including the corporation's portion of the cost, and may issue debentures for the sums so borrowed. Issue of debentures.

(3) The provisions of *The Municipal Act,* as to by-laws for creating debts shall apply to by-laws passed under the authority of subsection 2, except that it shall not be necessary Application of Rev. Stat. c. 192.

(*a*) That the by-law be submitted to or receive the assent of the electors.

(*b*) That any rate be imposed for the payment of the principal of so much of the money borrowed as represents the owners' portion of the cost or of the interest thereon, other than the special rate per foot frontage imposed to meet it.

(*c*) To comply with the provisions of subsections 5 and 7 of section 263 of *The Municipal Act.* Rev. Stat. c. 192.

And except that the debentures, save as provided by section 42, shall be payable within the lifetime of the work.

(4) The special rates imposed for the owners' portion of the cost shall form a special fund for the payment of the debentures issued under the authority of subsection 2 and the interest thereon, and shall not be applicable to or be applied for any other purpose. Special rates for owner's portion to form special fund.

(5) If in any year the amount realized from the special rate imposed to provide for the owners' portion of the cost and interest is insufficient to pay the amount falling due in such year in respect of so much of the debentures as represent the owners' portion of the cost the Council shall provide for the deficiency in the estimates for the following year and levy and collect the same by a general rate, but this shall not relieve the land specially assessed from the special rate thereon. General rate to meet deficiency in special rate.

(6) The amount borrowed under the provisions of subsection 2, in respect of the owners' portion of the cost, shall not be deemed to be part of the existing debenture debt of the corporation within the meaning of section 288 of *The Municipal Act.* Owners' portion not to be deemed part of debenture debt of corporation. Rev. Stat. c. 192.

(7) Instead of borrowing the amount of the corporation's portion of the cost of a work undertaken the Council may include the same in the estimates of the year. 1 Geo. V. c. 58, s. 40. Corporation's portion may be included in yearly estimates.

41.—(1) Where two or more works have been constructed and the by-laws provided for by subsection 2 of section 40 have been passed, instead of borrowing the separate sums thereby authorized to be borrowed and issuing debentures therefor, the council by by-law Consolidation of by-laws.

hereinafter called the consolidating by-law, may provide for borrowing the aggregate of such separate sums and for issuing one series of debentures therefor.

Recitals.

(2) The consolidating by-law shall show by recitals or otherwise in respect of what separate by-laws it is passed.

Rates not to be imposed by consolidating by-law.

(3) It shall not be necessary that the consolidating by-law shall impose any rate to provide for the payment of the debentures issued under it or the interest thereon, but the rates imposed by the separate by-laws shall be levied, collected and applied for that purpose. 1 Geo. V. c. 58, s. 41.

Term of annual instalments of special assessment.

42.—(1) The Council shall impose upon the land liable therefor the special assessment with which it is chargeable in respect of the owners' portion of the cost, and the same shall be payable in such annual instalments as the Council shall prescribe, but not so as to extend beyond the lifetime of the work, unless the work is of the class prescribed in clause (*j*) of section 3, in which case the annual instalments may extend over a period of not more than 40 years.

Interest.

(2) In fixing the amount of the annual instalments a sum sufficient to cover the interest shall be added.

Commutation of special rates.

(3) The Council may also either by a general by-law or by a by-law applicable to the particular work prescribe the terms and conditions upon which persons whose lots are specially assessed may commute for a payment in cash the special rates imposed thereon. 1 Geo. V. c. 58, s. 42.

Application of Rev. Stat. c. 195, ss. 94-97.

43. The provisions of sections 94 to 97 and the other provisions of *The Assessment Act* as to the collection and recovery of taxes, and the proceedings which may be taken in default of payment thereof, shall apply to the special assessments and the special rates imposed for the payment of them. 1 Geo. V. c. 58, s. 43.

Where special assessments irregular, new assessments may be made.

44.—(1) If a debt has been incurred by the corporation for or in respect of a work undertaken before the passing of this Act and after the incurring of the debt, the special assessment for the work is found or adjudged to be invalid or the by-law for borrowing money to defray the cost of the work is quashed or set aside either wholly or in part by reason of any irregularity or illegality in making such assessment or in passing such by-law, the Council shall cause a new assessment to be made or may pass a new by-law when and so often as may be necessary to provide the money required to be raised to discharge the debt so incurred.

Where by-law quashed, Court may direct passing of new by-law.

(2) In the case of a work undertaken after the passing of this Act, if the special assessment in respect of it has become confirmed under the provisions of section 38 no by-law for borrowing money to defray the cost of the work or for imposing the special assessment shall

be quashed, set aside or adjudged to be invalid by reason of its illegality or of any defect in it, but the Court in which any proceeding for quashing, setting aside or declaring to be invalid the by-law is taken shall on such terms and conditions as to costs and otherwise as may be deemed proper direct the Council to amend or to repeal such by-law and, where a repealing by-law is directed, to pass a new by-law in proper form in lieu of the repealed by-law, and it shall be the duty of the Council to pass such by-law or by-laws accordingly.

Liabilities incurred to be binding.

(3) Every liability or obligation incurred and every debenture issued by the corporation under the authority of any such defective or illegal by-law shall be as effectual and as binding as if the amending or new by-law directed to be passed had been passed and was in force at the time such liability or obligation was incurred or such debenture was issued.

Where Court of its own motion directs passing of new by-law.

(4) Although no proceeding has been taken to quash, set aside or declare invalid the by-law, the Council may of its own motion and if required by any person to whom it has incurred any liability on the faith of the by-law shall pass such amending or new by-law as may be necessary to make effectual and binding the liability so incurred and any debenture issued under the authority of such by-law, and the provisions of subsection 3 as to the effect of an amending or new by-law shall apply to any by-law so passed. 1 Geo. V. c. 58, s. 44.

Repair of Work.

Maintenance and repair of work by corporation.

45.—(1) After a work undertaken has been completed, it shall during its lifetime be kept in repair by and at the expense of the corporation.

General duty to repair not affected.

Rev. Stat. c. 192.

(2) Nothing in this Act shall relieve the corporation from any duty or obligation to keep in repair the highways under its jurisdiction, to which it is subject either at common law or under the provisions of *The Municipal Act*, or otherwise, or impair or prejudicially affect the rights of any person who is damnified by reason of the failure of the corporation to discharge such duty or obligation. 1 Geo. V. c. 58, s. 45.

Compelling corporation to repair.

46.—(1) Where, at any time during the lifetime of a work undertaken, the corporation fails to keep and maintain it in a good and sufficient state of repair, and, after one month's notice in writing by the owner or occupant of any lot specially assessed requiring the corporation to do so does not put the work in repair, a Judge of the Supreme Court, or the Judge of the County Court of the County in which the municipality lies, upon the application of any owner or occupant of any land so specially assessed, may make an order requiring the corporation to put the work in repair.

Determination as to necessary repairs.

(2) The Judge may determine what repairs are necessary and by his order may direct them to be made in such manner, within such time and under such supervision as he may deem proper.

Remuneration of person supervising.

(3) Where a person under whose supervision the repairs are to be made is appointed, the Judge may fix and determine the remuneration to be paid to such person and the same shall be paid by the corporation and payment thereof may be enforced in like manner and by the same process as a judgment for the payment of money.

Effect of order.

(4) The order shall have the same effect and may be enforced in like manner as a peremptory mandamus.

Where repairs may be made by applicants, and payment therefor.

(5) If the corporation does not comply with the order of the Judge, in addition to any other remedy to which the applicant for the order may be entitled the Judge may authorize the repairs to be made by the applicant, and if made by him the cost thereof shall be ascertained and determined by the Judge and when so ascertained and determined payment thereof may be enforced in like manner and by the same process as a judgment for the payment of money.

Appeal to Divisional Court.

(6) An appeal shall lie to a Divisional Court from any order made under the provisions of this section, and the procedure where the appeal is from an order of a Judge of the Supreme Court shall be the same as on an appeal from an order made in an action in the Supreme Court, and if the appeal is from an order of a Judge of a County Court the same as on an appeal from an appealable order made in an action in the County Court. 1 Geo. V. c. 58, s. 46.

Assessment of Land Exempt from Taxation.

Certain lands exempt from taxation liable to be specially assessed. Rev. Stat. c. 195.

47. Land on which a church or place of worship is erected, or which is used in connection therewith, and the land of a university, college or seminary of learning, whether vested in a trustee or otherwise, which is exempt from taxation under *The Assessment Act,* except schools maintained in whole or in part by a legislative grant or a school tax, shall be liable to be specially assessed. 1 Geo. V. c. 58, s. 47.

Land exempt from taxation for local improvements to be specially assessed.

48. Land exempt from taxation for local improvements under any general or special Act shall nevertheless, for all purposes except petitioning for or against undertaking a work, be subject to the provisions of this Act and shall be specially assessed; but the special assessments imposed thereon which fall due while such land remains exempt, shall not be collected or collectable from the owner thereof but shall be paid by the corporation. 1 Geo. V. c. 58, s. 48.

Street Cleaning, etc.

Cleaning, watering, lighting streets, etc.

49.—(1) The council may by by-law provide that thereafter the annual cost of cleaning, clearing of snow and ice, watering, oiling, sweeping, lighting, light supplied in excess of that supplied at the expense of the corporation at large, cutting grass and weeds, and trimming trees and shrubbery on any street or any one or more of such services shall be specially assessed upon the land abutting directly on such street, according to the frontage thereof, and the foregoing pro-

visions of this Act shall not apply to such services. 1 Geo. V. c. 58, s. 49, (1); 2 Geo. V. c. 44, s. 6.

(2) Instead of naming the particular street or streets, the by-law may apply to all the streets in a defined section or sections of the municipality.

(3) Where the council so provides the amount of the special rate imposed to defray such cost may be entered on the collector's roll and collected in like manner as other taxes. Application to defined areas, special rate.

(4) The by-law shall remain in force from year to year until repealed. 1 Geo. V. c. 58, s. 49, (2-4). Duration of by-law.

50.—(1) Where a highway forms the boundary between two or more municipalities, although it lies wholly within one or partly within two or more of them, the corporations of the municipalities may agree Power to construct works on boundary lines.

(*a*) to undertake in respect of such highway or any part of it any work or service which may be undertaken as a local improvement under this Act;

(*b*) as to the council by which the work or service shall be undertaken;

(*c*) as to whether the corporations' portion of the cost shall be provided for by borrowing or shall be included in the estimates of the year; and

(*d*) as to the proportions in which the corporations' portion of the cost shall be borne by such corporations respectively.

(2) The council of the municipality which according to the agreement is to undertake the work or service, hereinafter called the initiating council, shall have all the powers and perform all the duties in respect of it which may be exercised or are to be formed by the council of a municipality which undertakes a work or service as a local improvement under this Act, and the highway shall, for the purposes of the work or service, be deemed to lie wholly within and to be under the exclusive jurisdiction of the initiating council. Powers and duties of initiating council.

(3) The clerk of the initiating council shall forthwith, after the passing of its by-law imposing the special rates to defray the owners' portion of the cost, deliver or transmit by registered post to the clerk of any municipality in which is situate any land upon which a special rate has been imposed a copy of the by-law certified under his hand and the seal of the corporation to be a true copy. Certified copies of by-law to be sent to clerks of other municipalities.

(4) The rates required by the by-law to be levied and collected in any year upon land in any municipality other than that by the council Collection of rates in other municipalities.

of which the by-law is passed shall be collected by the council of such municipality in like manner as if such rates had been imposed by that council.

Payment over to initiating council.

(5) The corporation of each of the municipalities other than that by the council of which the work or service is undertaken shall pay to the last mentioned corporation the sums which are to be levied and collected in that year under the next preceding subsection, and such payment shall be made on demand therefor at any time after the 14th day of December in that year, and shall be made whether or not such rates have been collected from the persons liable to pay them.

Payment not to relieve land assessed.

(6) Such payment shall not relieve any land specially assessed from the special rate thereon, but it shall remain liable for the special rate until it is paid.

Payment over where corporations' part included in estimates.

(7) Where the agreement provides that the corporations' portion of the cost shall be included in the estimates of the year, the corporation of each of the municipalities, other than that by the council of which the work or service is undertaken, shall pay to that corporation when the amount of the corporation's portion of the cost is finally determined its share or portion of such cost, and the amount so paid shall be provided for in the estimates for the then current year of the council of the corporation which is to pay it.

Where corporations' portion met by issue of debentures.

(8) Where the agreement provides that the amount required to defray the corporation's portion of the cost is to be borrowed, the corporation of each of the municipalities, except that by the council of which the work or service is undertaken, shall in each year during the currency of the debentures issued for the money borrowed pay to that corporation the same proportion of the principal and the interest payable in that year as under the agreement it is to bear of the corporation's portion of the cost, and the amount which the by-law for borrowing the money requires to be raised in that year shall be reduced by the sum so paid.

Maintenance and repair.

(9) The corporations shall bear the cost of keeping the work in repair in the proportions in which the cost of the work is to be borne by them. 3-4 Geo. V. c. 44, s. 4.

Special Provisions as to Townships, Villages, etc.

Waterworks and fire engines.

51.—(1) The council of a township or village may undertake as a local improvement

(*a*) The construction of waterworks;

(*b*) The purchase of fire engines and other appliances for the purpose of fire protection;

(*c*) The laying of mains and other appliances to connect with any existing system of water works, whether owned by the corporation or by any other person. 1 Geo. V. c. 58, s. 50, (1); 3-4 Geo. V. c. 44, s. 5.

Assessment of owners' part in land in defined areas.

(2) The council, by the by-law for undertaking the work, may provide that the owners' portion of the cost shall be specially assessed against the land in any defined section or sections of the municipality and that the annual cost of managing and maintaining the work shall be assessed against and levied upon such land. 1 Geo. V. c. 58, s. 50, (2).

Trustees for managing fire engines and appliances.

(3) In the case of the purchase of fire engines and other appliances for the purpose of fire protection, the council may, by by-law, provide for

(*a*) The election of a board of three trustees, and the time and manner of holding the election;

(*b*) The term of office of such trustees;

(*c*) Filling vacancies in such board;

(*d*) The election of an auditor;

(*e*) The appointment of a second auditor by such board; and

(*f*) The duties of such auditors.

1 Geo. V. c. 58, s. 50 (3); 3-4 Geo. V. c. 44, s. 5.

Care and control of fire engines, etc.

(4) The board of trustees shall have the care, control and management of such fire engines and appliances.

Qualification of voters for election of trustees.

(5) No person shall be entitled to vote at the election of such trustees unless he is the owner of land to be specially assessed under the provisions of subsection 2, and is also qualified to vote at municipal elections. 1 Geo. V. c. 58, s. 50 (4-5).

Adoption of Local Improvement System.

Adoption of local improvement system. Rev. Stat. c. 192.

52. (1) The council of a corporation by by-law passed with the assent of the municipal electors, in accordance with the provisions of *The Municipal Act* may provide that all works which may be undertaken as local improvements, or any one or more classes or descriptions of such works thereafter, or after a day named in the by-law, shall be undertaken as local improvements and not otherwise.

Repeal of by-law.

(2) The by-law may be repealed, but only by a by-law passed with the like assent. 1 Geo. V. c. 58, s. 51.

Miscellaneous.

Special rates and covenant against incumbrances.

53. The special assessment and the special rates charged or chargeable upon land for or in respect of the cost of any work undertaken, whether upon petition or otherwise, except so much of them as is in arrear and unpaid shall not, as between a vendor and a purchaser, or as respects a convenant against incumbrances, or for the right to convey, or for quiet possession free from incumbrances, be deemed to be an incumbrance upon the land upon which the special rate is charged or chargeable. 1 Geo. V. c. 58, s. 52.

When work may be completed.

54. Proceedings for undertaking a work begun by one council may be continued, and the work may be begun, continued and completed by a succeeding council. 1 Geo. V. c. 58, s. 53.

Municipal Board may prescribe forms.

55. The Ontario Railway and Municipal Board may approve of forms of by-laws, notices and other proceedings to be passed, given or taken under or in carrying out the provisions of this Act, and every by-law, notice or other proceeding which is in substantial conformity with the form so approved shall not be open to objection on the ground that it is not in the form required by the provisions of this Act applicable thereto, but the use of such forms shall not be obligatory. 1 Geo. V. c. 58, s. 54.

FORM 1.

SECTION 11.

Take notice that

1. The Council of the Corporation of the of intends to construct as a local improvement (*describe the work*) on (*or* in) street, between (*describe the points between which the work is to be constructed*) and intends to specially assess a part of the cost upon the land abutting directly on the work (*in case other land is to be specially assessed add*) and upon the following land which is immediately benefited by the work (*describe the land*).

2. The estimated cost of the work is $, of which $ is to be paid by the Corporation. The estimated special rate per foot frontage is . The special assessment is to be paid in annual instalments.

3. A petition against the work will not avail to prevent its construction.

Dated.

Clerk.

(*Note.—Where that part of the municipality in which the land to be specially assessed is situate is divided into districts or sections the form will be altered to show the special rate per foot frontage in each district or section.*)

FORM 2.

SECTION 13.

Take notice that

1. The Council of the Municipal Corporation of the of intends to construct (*describe the work*) on (*or* in) street between (*describe the points between which the work is to be constructed*) as a local improvement and intends to specially assess a part of the cost upon the land abutting directly on the work (*in case other land is to be specially assessed add*) and upon the following land which is immediately benefited by the work (*describe the land*).

2. The estimated cost of the work is $, of which $ is to be paid by the Corporation, and the estimated special rate per foot frontage is . The special assessment is to be paid in annual instalments.

3. Persons desiring to petition against undertaking the work must do so on or before the day of 19 .

Dated

Clerk.

(*Note.—Where that part of the municipality in which the land to be specially assessed is situate is divided into districts or sections the form will be altered to show the special rate per foot frontage in each district or section.*)

FORM 3.

SECTIONS 33 (2) AND 37.

Take notice that

1. The Council of the Corporation of the of has constructed as a local improvement (*describe the work*) on (*or* in) street between (*describe the points between which the work has been constructed*).

2. The cost of the work is $, of which $ is to be paid by the Corporation. The special rate per foot frontage is . The special assessment is to be paid in annual instalments.

3. The estimated lifetime of the work is years.

4. A Court of Revision will be held on the day of 19 , at o'clock at the (*insert place of meeting*) for the purpose of hearing complaints against the proposed assessments or the accuracy of frontage measurements and any other complaint which persons interested may desire to make and which is by law cognizable by the Court.
or (*where the Court of Revision proceeds under section* 37).

4. You are served with this notice because the Court of Revision is of opinion that your lot though not specially assessed should be specially assessed in respect of the owners' portion of the cost of the work and an adjourned sittings of the Court will be held on the day of 19 , at o'clock at the (*insert place of meeting*) when the matter will be determined by the Court.

Dated

Clerk.

(*Note.—Where that part of the municipality in which the land to be specially assessed is situate is divided into districts or sections the form will be altered to show the special rate per foot frontage in each district or section.*)

AN ACT RESPECTING STATUTE LABOUR.

R.S.O., 1914, c. 196.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Short title.

1. This act may be cited as *The Statute Labour Act.* *New*

Exemptions.

Certain persons in naval and military service, etc., exempt.

2. The following persons shall not be liable to perform statute labour or to commute therefor:—

(*a*) Every person in His Majesty's Naval or Military Service on full pay, or on actual service;

(*b*) Every non-commissioned officer or private of the Volunteer force, certified by the officer commanding the company to which such volunteer belongs or is attached, as being an efficient volunteer; but this last exemption shall not apply to any volunteer who is assessed for property. 4 Edw. VII. c. 25, s. 2.

[*Firemen exempted in certain cases. See Rev. Stat. c. 201, s. 5 (2).*]

Islands used as summer resorts.

3. The owner or tenant of an island in the lakes not exceeding ten acres in extent and used with the houses erected thereon exclusively as a summer resort, and upon which the owner or his tenants do not reside more than three months in the year, and whereon no statute labour is done, shall not be rated for statute labour, nor shall the owner or tenant thereof be liable for the performance of statute labour or for the payment of commutation thereof for or in respect of such property. 4 Edw VII. c. 25, s. 3.

Cities, Towns and Villages.

Who liable and in what ratio, in cities, towns and villages.

4. Subject to the provisions of section 7 every other male inhabitant of a city, town or village of the age of twenty-one years and upwards, and under sixty years of age, and not otherwise exempted by law from performing statute labour, who has not been assessed upon the assessment roll of the city, town or village, shall, instead of such labour, be taxed at $1 yearly therefor, to be levied and collected as the council of the municipality may by by-law direct. 4 Edw. VII. c. 25, s. 4.

Townships.

Liability of persons not otherwise assessed in townships.

5. Subject to the provisions of section 7, every male inhabitant of a township, between the ages aforesaid, who is not otherwise assessed in any municipality in Ontario, and who is not exempt by law from performing statute labour, shall be liable to one day of statute labour on the roads and highways in the township. 4 Edw. VII. c. 25, s. 5.

Farmers' Sons.

Farmers' sons.

6. Every farmer's son entered as such on the assessment roll of any municipality, shall, if not otherwise exempted by law, be liable to perform statute labour or commute therefor, as if he were not so entered. 4 Edw. VII. c. 25, s. 6.

Reduction or Abolition of Tax.

Power to reduce or abolish statute labour.

7. The council of every city, town, village and township may pass by-laws to reduce or abolish the amount of statute labour to be performed or the amount to be paid in lieu thereof or to entirely abolish such statute labour and the performance thereof by all persons within the municipality. 4 Edw. VII c. 25, s. 7.

Proof to relieve from tax.

8. Subject to the provisions of section 7, no person shall be exempted from the tax in sections 4 or 5 mentioned, unless he produces a certificate that he is assessed elsewhere or that he has performed statute labour or paid the tax elsewhere in Ontario. 4 Edw. VII. c. 25, s. 8.

Performance of Statute Labour.

Ratio of service in case of persons assessed.

9.—(1) Except as hereinafter provided every person assessed upon the assessment roll of a township shall, if his property is assessed at not more than $300, be liable to two days' statute labour; at more than $300 but not more than $500, three days: at more than $500 but not more than $700, four days; at more than $700 but not more than $900, five days; and for every $300 over $900 or any fractional part thereof over $150, one additional day; but the council of any township may, by a by-law operating generally and rateably, reduce or increase the number of days' labour to which all the persons, rated on the assessment roll or otherwise, shall be respectively liable, so that the number of days' labour to which each person is liable shall be in proportion to the amount at which he is assessed; and in all cases both of residents and non-residents, the statute labour shall be rated and charged against every separate lot or parcel according to its assessed value.

Council may reduce or increase the number of days proportionately.

Amount of statute labour.

(2) Wherever one person is assessed for lots or parts of several lots in one municipality, not exceeding in the aggregate two hundred acres, the said part or parts shall be rated and charged for statute labour as if the same were one lot, and the statute labour shall be rated and charged against any excess over 200 acres as if the excess were one lot. 4 Edw. VII. c. 25, s. 9 (1-2); 10 Edw. VII. c. 89, s. 1.

Commutation of statute labour of non-residents.

Rev. Stat. c. 195.

(3) In townships where farm lots or portions thereof are owned by non-residents who have not required their names to be entered on the assessment roll, the statute labour shall be commuted by the township clerk in making out the roll required under section 101 of *The Assessment Act*, where such lots are under the value of $200, to a rate not exceeding one-half per centum on the valuation: but the council may direct a less rate to be imposed by a general by-law affecting such lots.

(4) Every resident shall have the right to perform his whole statute labour in the statute labour division in which his residence is situate, unless otherwise ordered by the municipal council. 4 Edw. VII. c. 25, s. 9 (3-4).

[*As to allowance of work in extinguishing bush fires as statute labour, see The Fires Extinguishment Act, Rev. Stat c. 243, s. 3.*]

Commutation of Statute Labour.

Commutation may be at $1.50 per day.

10. The council of any township may by by-law direct that a sum not exceeding $1.50 a day shall be paid as commutation of statute labour, for the whole or any part of such township, in which case the commutation tax shall be added in a separate column in the collector's roll, and shall be collected and accounted for like other taxes. 4 Edw. VII. c. 25, s. 10; 3-4 Geo. V. c. 47, s. 1.

Commutation may be fixed at any sum not exceeding $1.50.

11. Any local municipal council may, by a by-law passed for that purpose, fix the rate at which persons may commute their statute labour, at any sum not exceeding $1.50 for each day's labour; and the sum so fixed shall apply equally to residents who are subject to statute labour and to non-residents in respect to their property. 4 Edw. VII. c. 25, s. 11; 3-4 Geo. V. c. 47, s. 2.

If no by-law commutation to be at $1.

12. Where no such by-law has been passed the statute labour in townships, in respect of lands of residents and non-residents, shall be commuted at the rate of $1 for each day's labour. 4 Edw. VII. c. 25, s. 12.

Payment of tax in lieu of statute labour may be enforced by distress or imprisonment.

13.—(1) Every person liable to pay the sum named in section 4, or any sum for statute labour commuted under section 10, shall pay the same to the collector appointed to collect the same, within two days after demand therefor by the said collector; and in case of neglect or refusal to pay the same, the collector may levy the same by distress and sale of the goods and chattels of the defaulter, with costs of distress; and if no sufficient distress can be found the defaulter, for his refusal or neglect to pay the said sum, shall incur a penalty of $5.

Performance.

(2) Any person liable to perform statute labour under section 5 not commuted, shall perform the same when required so to do by the pathmaster or other officer of the municipality appointed for that purpose; and, in case of wilful neglect or refusal to perform such labour after six days' notice requiring him to do the same, shall incur a penalty of $5.

Penalty for neglect or refusal.

Penalties to be paid to treasurer of municipality.

(3) All sums and penalties, other than costs, recovered under this section, shall be paid to the treasurer of the local municipality, and shall form part of the Statute Labour Fund thereof. 4 Edw. VII. c. 25, s. 13.

Non-residents when not permitted to perform statute labour.

14. A non-resident whose name does not appear on the resident assessment roll, shall not be permitted to perform statute labour in respect of any land owned by him; but a commutation tax shall be charged against every separate lot or parcel, according to its assessed value and be entered in the non-residents collector's roll. In all cases in which taxes on such non-resident lands are paid, the municipal council shall order the amount to be expended in the statute labour division in which the property is situate. 4 Edw. VII. c. 25, s. 14.

If resident owner, etc. makes default commutation for statute labour to be entered upon collector's roll.

15.—(1) Where an owner or tenant makes default in performing his statute labour or in payment of commutation for the same, the overseer of highways in whose division he is placed shall return him as a defaulter to the clerk of the municipality before the 15th day of August, and the clerk shall in that case enter the commutation for statute labour against the land in the collector's roll of the current or following year, and the same shall be collected by the collector.

Overseer to expend the commutation money in the division.

(2) In every such case the clerk shall notify the overseer of highways, who may be appointed for such division in the following year, or after it has been collected, of the amount of such commutation, and the overseer shall expend the amount of such commutation upon the roads in the statute labour division where the property is situate, and shall give an order upon the treasurer of the municipality to the person performing the work. 4 Edw. VII. c. 25, s. 15.

Statute Labour in Unincorporated Townships—Road Commissioners.

Meeting for election of road commissioners.

16. Twenty resident landholders in any township which has not been incorporated, either alone or in union with some other township, shall have the right to have a public meeting called for the purpose of electing road commissioners. 4 Edw. VII c. 25, s. 16.

Requisition for meeting.

17. The persons desiring the meeting to be called shall sign a requisition authorizing some person who shall be named in the requisition, and may either reside in the township or otherwise, to call a meeting of the resident landholders of the township for the purpose aforesaid. 4 Edw. VII. c. 25, s. 17.

How meeting may be called in case person named in requisition fails to call it.

18. In case the person so named declines to call a meeting or neglects to do so for ten days after the requisition is presented to him, any three of the persons who signed the requisition may call the meeting. 4 Edw. VII. c. 25, s. 18.

Notice of meeting.

19. The notice calling the meeting shall name a place, day and hour, for holding the meeting and shall be posted at six places at the least in the township, and the day named shall be at least six days distant from the day of posting the notice. 4 Edw. VII. c. 25, s 19.

Number of commissioners.

20. The election shall take place at the time named, and the number of the commissioners to be elected shall be either three or five, as may be stated in the requisition, unless the meeting, before proceeding to an election, decides that a number different from that stated in the requisition shall be elected, but such number shall not be less than three nor more than five. 4 Edw. VII., c. 25, s. 20.

Chairman of meeting.

21. In case the meeting is called by the person named in the requisition, he shall be entitled to preside at the meeting as chairman, but if he is absent, or declines to act, the landholders present may appoint another chairman; the chairman shall act as returning officer, and shall, in the event of a tie, have a casting vote, although he may have previously voted, or may not be a landholder of the township; the landholders present shall also appoint a secretary, who shall record the proceedings. 4 Edw. VII. c. 25, s. 21.

Mode of voting.

22. The landholders present shall decide how the voting for commissioners shall be conducted; and if the vote is taken openly the commissioners shall be elected one at a time, but if it is decided to proceed by ballot all the commissioners shall be elected together, each person having the right to vote for as many persons as there are commissioners to be elected. 4 Edw. VII. c. 25, s. 22.

Record of persons voting.

23. The chairman shall, at the request of any two landholders present, direct the secretary to record the names of all persons voting and, unless the vote is by ballot, how each votes. 4 Edw. VII. c. 25, s. 23.

Objections to voters.

24. If an objection is made to the right of any person to vote at the meeting, such person shall name the property in respect of which he claims the right to vote, and the chairman shall administer to such person an oath, or affirmation if he be by law permitted to affirm, according to the following form, whereupon such person shall be permitted to vote:

You swear (*or, if the voter is entitled to affirm,* solemnly affirm) that you are of the age of twenty-one years, and that you are the owner or locatee of lot in the concession of this township, and that you are entitled to vote at this election.

So help you God.

4 Edw. VII. c. 25, s. 24.

Term of office.

25. The commissioners elected shall hold office until the 31st day of December next after their election, and shall take, before a Justice of the Peace, a declaration of office similar to that of a councillor in a municipal corporation. 4 Edw. VII. c. 25, s. 25.

First meeting of commissioners.

26. The commissioners shall meet within a fortnight after their election, and shall then or as soon thereafter as may be, name the roads and parts of roads upon which statute labour is to be performed, and shall appoint the places and times at which the persons required to perform statute labour are to work. 4 Edw. VII. c. 25, s. 26.

27.—(1) The commissioners shall have power to open road allowances when the same have been laid down in the original surveys, and where such road allowances are either wholly or partly impracticable to lay out roads in lieu thereof; and where no road allowances are laid down in the original surveys, but five per cent. of the area is reserved for roads, the commissioners may lay out roads where necessary and direct the performance of statute labour accordingly. 61 V. c. 26, s. 1. Powers of road commissioners as to opening roads.

(2) In cases of deviations from road allowances and of roads laid out where there are no road allowances as above provided, the commissioners shall cause a plan thereof, so far as the same affects ungranted lands of the Crown, to be made by an Ontario Land Surveyor and shall file the same in the Department of Lands, Forests and Mines. 61 V. c. 26, s. 3. Filing plan of roads in Crown Lands Department.

28. The times to be appointed for the performance of statute labour shall, unless the meeting of the landholders to elect commissioners otherwise directs, be not earlier than the 20th day of June, nor later than the 20th day of July in any year. 4 Edw. VII. c. 25, s. 27. Time for performance of statute labour.

29.—(1) Each owner or locatee of land may be required each year to perform two days' labor for every one hundred acres he holds, and for the first ten acres which he has cleared after the first ten. he may be required to perform one day's additional labour, and for every twenty acres over and above the first ten, one additional day's labour, and each householder may be required each year to perform one day's labour. Ratio for service by owners and location of land.

(2) Any land-owner, owning less than one hundred acres, may be required to perform statute labour as the commissioners may direct, but not exceeding the scale provided for in subsection 1 of this section where the land is in part cleared, and not exceeding two days where no part of the land is cleared. 4 Edw. VII., c. 25, s. 28. Liability of landowners to statute labour.

30.—(1) Each commissioner shall, during the time he is required perform statute labour, act as overseer, and the commissioners shall arrange among themselves for overseeing the various bodies of men engaged in doing statute labour. Commissioners to oversee work.

(2) A commissioner may be paid out of the commutation fund for not exceeding two days' labour at the rate of $1.25 per day if performed by him over and above the number of days' labour he may by law be required to perform in respect of his own property. Payment of commissioners.

(3) The commissioners shall have the same powers as municipal corporations have in reference to statute labour, to appoint overseers and require returns to be made to them of the statute labour performed in their districts. 4 Edw. VII. c. 25, s. 29.

Commutation.

31. Any person instead of performing the statute labour required of him may commute therefor by payment at the rate of $1.50 per day. and the commissioners shall expend all commutation money upon the roads on which the labour which is commuted for should have been performed. 4 Edw. VII. c. 25, s. 30; 3-4 Geo. V. c. 47, s. 3.

Meeting for election of new commissioners.

32. The majority of the commissioners may call a meeting to be held at any time during the month of January, for the election of their successors, but in case of their failure so to do a meeting may be called in the manner hereinbefore provided for a first election. 4 Edw. VII., c. 25, s. 31.

Penalty for neglect to perform work.

33. Any person liable to perform statute labour under the provisions of sections 16 to 35, who after six days' notice requiring him to do the same, wilfully neglects or refuses to perform, at the time and place named by the commissioners, the number of days' labour for which he is liable shall incur a penalty of $5, and in addition $1.50 for each day in respect of which he makes default, the same to be paid to the commissioners and to be expended in improving the said roads. 4 Edw. VII. c. 25, s. 32; 34 Geo. V. c. 47, s. 4.

Book to be kept.

34.—(1) The Commissioners shall cause a book to be kept in which there shall be entered the name of every person liable for the performance of statute labour or payment of the commutation and the lot or parcel of land in respect of which he is so liable.

Entry of payment or performance.

(2) Upon the performance of statute labour or payment of the commutation entry shall be made thereof in the book in a column provided for that purpose.

Entry of default.

(3) Where any person after six days' notice in writing from the Commissioners does not perform his statute labour the Commissioners shall cause an entry thereof to be made, and in the proper column shall enter the amount of such commutation against the name of the person in default.

Form of roll.

(4) The book shall be kept as nearly as may be in the form of a collector's roll for an organized township.

Return of arrears to Sheriff.

(5) On the first day of June in the year following that in which default was made the Commissioners shall make a return to the Sheriff of the District, showing each lot or parcel of land upon which the commutation has not been paid, the name of the owner or locatee, the amount chargeable at the date of the return, and the year for which the amount in arrear was imposed.

Sheriff to keep account of arrears.

(6) The Sheriff shall enter the particulars so furnished in a book to be kept by him for that purpose.

(7) The Commissioners shall not receive any payments on account of such arrears after the expiration of two years from the date when the same became due and chargeable, but in the case of payments made within that period the Commissioners shall forthwith notify the sheriff thereof and the Sheriff shall enter such payment against the proper lot or parcel in the book kept by him for that purpose. Payment of arrears not to be made to commissioners after two years.

(8) After the expiration of the said period of two years all arrears shall be payable to the Sheriff, and the Sheriff shall enter every payment in the book kept by him and shall return the amount paid to the Commissioners. After two years all arrears to be paid to Sheriff.

(9) All arrears chargeable under this section shall bear interest at the rate of ten per cent. per annum. Arrears to bear interest.

(10) Whenever it appears from the entries in the book kept by the Sheriff that any amount chargeable for statute labour is in arrear for three years from the 31st day of December in the year in which the same became payable, the Sheriff shall proceed to collect the same with interest at the rate aforesaid by the sale of the lands in respect of which such arrears are chargeable and the procedure in relation to such sale and the provisions applicable to deeds, the redemption of lands thereafter and deeds to be given to tax purchasers shall be the same as nearly as possible as in the case of the sale of lands by the Sheriff for arrears of taxes in organized municipalities in the Provisional Judicial Districts of Muskoka and Parry Sound. 9 Edw. VII. c. 77, s. 1. Sale of land by Sheriff for arrears.

35. The Commissioners, when duly elected, shall serve during the term for which they are elected, or shall forfeit the sum of $5, which may be sued for, together with costs, in any Court having jurisdiction, by any three electors making the complaint. 4 Edw. VII. c. 25, s. 33. Penalty for neglect to serve as commissioners.

36. The penalties imposed by this Act shall be recoverable under the *Ontario Summary Convictions Act*. Penalties. Rev. Stat. c. 90.

AN ACT FOR THE IMPROVEMENT OF PUBLIC HIGHWAYS.

R.S.O., 1914, c. 40.

HIS Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario enacts as follows:—

Short title.

1. This Act may be cited as *The Highway Improvement Act.* See 2 Geo. V. c. 11, s. 14.

2. In this Act, "Minister" shall mean Minister of Public Works. *New.*

Appropriated for road improvements.

3. So much of the sum of $2,000,000 heretofore set apart out of the Consolidated Revenue Fund of Ontario to aid in the improvement of public highways as remains unexpended shall continue to be appropriated to that purpose, subject to the terms and conditions hereinafter set forth. 7 Edw. VII. c. 16, s. 1; 2 Geo. V. c. 11, ss. 1, 2, 3.

Powers of County Council.

4.—(1) The council of any county may by by-law adopt a plan for the improvement of highways throughout the county by assuming highways in any municipalities in the county in order to form or extend a system of county highways, designating the highways to be assumed and improved and intended to form or be added to such system; and in case it is impracticable to benefit all the townships in any county equitably by a system of county highways, such plan may provide for compensation to any township which by reason of the location of such highways or of the unequal distribution of the expenditure thereon, may not benefit proportionately, by a grant of such specific amount or annual sum of both, to be expended in the improvement of the highways of such township as when so expended will make such plan equitable for the whole county.

Abolition of tolls.

(2) A plan adopted by the county council, under this section, may include the purchase of toll roads or freeing them from toll.

Grants to villages and towns.

5.—(1) A county council may from time to time while carrying out a plan of highway improvement under this Act, by by-law make grants to villages or towns not separated from the county, for the purpose of improving such highways or portions of highways in such villages or towns as may be designated in such by-law and which are extensions of, or form connections between different portions of county roads, but no such highway shall by reason of such by-law or of the expenditure of any such grant thereon be deemed to have been assumed by the county or to form part of the county system of highways. 7 Edw. VII., c. 16, s. 2, (1), (2), (3), *part*; 1 Geo. V. c. 11, s. 1, (1), *part.*

How reckoned.

(2) A grant made under subsection (1) to a town or village having a population of not more than 3,000 shall be deemed to form part of the estimated expenditure in carrying out a plan of highway improvement in such county for the purpose of ascertaining the amount of aid which may be granted to the county under this Act, if—

(*a*) The roads or streets to be improved in the village or town have been designated by the by-law of the council of the county, to which there has been attached a plan of the village or town to be aided; Proviso.

(*b*) Such by-law has been approved by the Minister; and

(*c*) The work done upon such roads and streets is in accordance with the regulations of the Department of Public Works with respect to highways.

(3) In the case of a village or town having a population of more than 1,500, the amount granted under subsection (1) shall be expended solely upon roads and streets or portions thereof which lie opposite to lands on one side or the other thereof used for agricultural purposes. Cases of certain villages or towns.

(4) The approval of the Minister in writing shall be conclusive as to the population of any village or town for the purposes of this section. How population determined.

(5) Subsections 2, 3 and 4 shall not affect the payment to a village or town under subsection (1) of any grant made by the council of a county and approved by the Minister before the 24th day of March, 1911, and any such grant shall be included in estimating the expenditure of the county for the purpose of ascertaining the amount of aid to which the county is entitled under this Act as if those sections had not been enacted. 1 Geo. V. c. 11, s. 1, (1) *part, and* 2. Subsections 2, 3 and 4 not to affect grants made before 24th March, 1911.

6. Every highway constructed or repaired in pursuance of a plan adopted by by-law approved by the Lieutenant-Governor in Council under this Act shall be constructed or repaired according to the regulations of the Public Works Department with respect to highways. 7 Edw. VII., c. 16, s. 2 (4). Regulations of Public Works Department.

7. The Council of a county in which highway improvements are undertaken under this Act shall by by-law appoint an engineer or some other competent person to be approved by the Minister to act as county road superintendent under the directions of the Council. Appointment of road superintendent.

8. No grant shall be made to any county under this Act until section 7 has been complied with. Idem.

9. The County Road Superintendent shall place some competent person as foreman or inspector in charge of any work which it is impossible for him personally to oversee, and it shall be the duty of the foreman or inspector to see that the work is properly carried out. Foreman or Inspector.

10. No member of the council of the county and no member of the council of any local municipality in the county shall be appointed or act under sections 7 or 9, or be employed by the county road Members of councils not to be appointed.

superintendent in any capacity, and any such member who is appointed, or who acts or is employed in contravention of this subsection shall be disqualified from sitting or voting in the council of which he was a member at the time of his appointment or employment. 2 Geo. V. c. 11, s. 4.

When by-law not to require assent of electors.

11. Where a by-law passed under the authority of the Act has received the assent of two-thirds of the members of the county council representing at least one-half of the total equalized assessment of the county, it shall not be necessary to submit the same to the electors of the county; but if before the final passing of any by-law under this Act the same has been submitted to and has received the approval of the electors of the county qualified to vote on money by-laws, such by-law may be finally passed by a majority of the members of the council present and voting thereon; and a by-law so submitted to the electors may after such submission or after the final passing thereof be amended by the council in order to comply with any direction or requirement of the Minister, and it shall not be necessary to submit any such amending by-law to the electors. 8 Edw. VII., c. 23, s. 1.

Approval by Order in Council.

12.—(1) The corporation of a county shall not be entitled to receive any aid under this Act, unless the by-law providing for the improvements in respect of which aid is to be granted has been approved by the Lieutenant-Governor in Council. 2 Geo. V., c. 11, s. 10.

Enquiry by Minister

(2) Upon the application of any county council for the approval of a by-law under this Act, the Minister may obtain such report upon the plan adopted by such county council as he may deem necessary and may hear any township council which may be dissatisfied therewith before presenting such application for the consideration of the Lieutenant-Governor in Council. 7 Edw. VII., c. 16, s. 3 (2).

Payments to county out of appropriation.

13.—(1) Wheu a plan of highway improvement adoped by by-law approved by the Lieutenant-Governor in Council under this Act has been carried out, or at any time during the progress of the work, the county council may submit to the Minister a statement setting forth the expenditure to date in carrying out such plan, including all payments of grants authorized by this Act, together with the declaration of the treasurer of the county that such statement is correct, and also the report of the county engineer or road superintendent that such work is in accordance with the regulations of the Department of Public Works, and on the receipt of such statement and certificate by the Treasurer of Ontario, certified and approved by the proper officer of the Department of Public Works the Lieutenant-Governor in Council may direct the payment to the corporation of the county out of the fund set apart under this Act of a sum equal to one-third of the amount of such expenditure. 7 Edw. VII., c. 16, s. 4.

Apportionment of expense in united counties.

14. The council of any union of counties which has passed a by-law under this Act designating the roads to be improved within the united counties, after such by-law has been approved by the Lieutenant-Gover-

nor in Council may with the consent of two-thirds of the representatives of any county in the union by by-law apportion the amount to be expended in any year in such county and may provide that the amount so to be expended shall be raised by special rate upon the property liable to taxation in such county, or with the like consent the council of the united counties may by by-law provide for the issue of debentures for the amount to be expended and may declare that such debentures shall be a charge upon the property liable to taxation in such county, and that the amount required to be raised annually for principal and interest of any debt so created shall be levied and collected in each year during the currency of such debentures by an annual special rate upon the property liable to taxation in such county. 7 Edw. VII., c. 16, s. 5.

Issuing debentures for expenditures on highways. Rev. Stat. c. 192.

15. The council of any county which takes advantage of this Act may from time to time pass by-laws to raise by debentures, payable in not more than thirty years, as provided by *The Municipal Act*, such sums as may be necessary to meet any expenditure on highways under this Act, not exceeding two per centum of the equalized assessment of the county; or the Council instead of raising money by debentures may provide the money required out of County funds, or by an annual County rate in the manner authorized, by *The Municipal Act*, and all the provisions of this Act shall apply to any money heretofore or hereafter so provided as fully as if debentures had been issued, whether a by-law transferring such money to a special account under this Act has or has not been passed. 7 Edw. VII., c. 16, s. 6; 2 Geo. V., c. 11, s. 6. 2 Geo. V., c. 11, s. 6.

Raising money by general rate instead of debentures.

Statute labour, application of upon roads aided.

16. The council of any township may by by-law direct that the statute labor for which lands fronting on roads in such township constructed or repaired under this Act may from year to year be liable may be commuted, and the amount so received may be paid over to the county and applied in repairing such roads and in removing snow therefrom and keeping the same open during the winter months. 7 Edw. VII., c. 16, s. 7.

Aid to county where road system established prior to 7 Edw. VII., c. 16.

17. Where before the 20th April, 1907, the council of any county had established a system of county roads approved by the Lieutenant-Governor in Council as provided by *The Act for the Improvement of Public Highways*, passed in the first year of the reign of his late Majesty King Edward the Seventh, chaptered 32, such system of county roads shall be deemed to me within the meaning and intent of this Act. 7 Edw. VII., c. 16, s. 8.

Object-lesson or experimental roads.

18.—(1) The Minister may arrange with the corporation of any local municipality for the construction or improvement therein of an object-lesson or experimental road, or of more than one such road.

Powers of Minister. Rev. Stat. c. 35.

(2) The Minister may lay out, construct, improve and complete any such road and *The Ontario Public Works Act* shall apply to anything done by him under this Act.

Cost of work.

(3) The cost of material, labour, special engineering or other services, plant, machinery and equipment and the repair and maintenance of plant, machinery or equipment in or about any work undertaken by the Minister under this section or incidental thereto, shall be paid out of the fund mentioned in section 3 , upon the certificate of the Minister and for that purpose accountable cheques may from time to time be issued against such fund in favour of the Minister upon his requisition therefor.

Duty of maintenance.

(4) A road shall not, by reason of its having been constructed or improved under this Act, become or be the property of the Crown, but every such road after its construction or improvement shall be under the jurisdiction of the council of the municipality in which it is situate and shall be maintained and kept in repair in the same manner as other roads in the municipality. 2 Geo. V., c. 11, s. 9.

Intersection of other highways by county road.

19. Wherever a county road intersects a highway which is not a county road the continuation of the county road to its full width across the road so intersected, including the bridges and culverts thereon or touching thereon, shall be a part of the county road system. 7 Edw. VII., c 16, s. 9.

Sidewalks excepted.

20. The corporation of a county shall not by reason of assuming a highway under this Act, be liable for the building, maintenance or repair of sidewalks on any county road or portion thereof. 7 Edw. VII., c. 16, s. 10.

Powers as to snow fences. Rev. Stat. c. 11.

21.—(1) A county council shall in respect to county roads have all the powers conferred on townships, cities, towns and villages under *The Snow Fences Act.* 7 Edw. VII., c. 16, s. 11.

Powers of county council over roads assumed.

(2) The corporation of the county shall, in respect to said roads, have all the rights, powers, benefits and advantages conferred either by by-law or contract or otherwise, upon the corporation of the local municipality or the corporation of the local municipalities which had jurisdiction over such roads before they were assumed by the corporation of the county, and the corporation of the county may sue upon such rights or under such agreements or by-laws in the same manner and to the same extent as the local municipality or municipalities might have done if such roads had not been adopted as county roads. 10 Edw. VII., c. 14, s. 1.

Highways to be county highways.

22. All highways designated and assumed by a county council in accordance with section 4 of this Act, except as in subsection 1 of section 5 otherwise provided, shall be maintained and kept in repair by the corporation of the county in which they are situate, and in all cases of doubt or dispute as to what constitute works of maintenance or repair, and what constitute works of construction and the purchase and maintenance and repair of road machinery, plant and equipment, properly chargeable under this Act, the decision of the Minister shall

Proviso.

be final; but after the expiration of three years from the final construction and completion of the county system of roads, which shall be so declared by the Minister, the county council may, with the approval of the Lieutenant-Governor in Council and two-thirds of the local municipalities in the county expressed by by-law, declare that such system of county roads shall, on the 1st of January following, revert to the local municipalities in which the same are situate, and such roads shall thereafter be maintained in the same manner as township roads. 2 Geo. V., c. 11, s. 7.

Roads revert to townships.

23. Where the Minister is of opinion that any highway or section of a highway assumed by a county council under the said Act, has ceased to be, or for some other reason is not of sufficient importance to be constructed and maintained as a county road, such highway or section thereof may be struck off the approved plan of county roads, by the Lieutenant-Governor in Council, and such highway or section thereof shall thereupon revert to the local municipality in which the same is situate. 2 Geo. V. c. 11, s. 8.

Where improved highway ceases to be important.

24. The Lieutenant-Governor in Council may enter into an agreement with the Governor in Council or with any member of His Majesty's Privy Council for Canada acting for and on behalf of the Governor in Council for the application to the cost of highway improvement under this Act, of such subsidy or subsidies, or any part of such subsidy or subsidies as may be appropriated for highway improvement by the Parliament of Canada, and the Lieutenant-Governor in Council may vary the proportionate amounts to be paid to or by municipalities under this Act, by reason of such subsidy or subsidies, and may vary the conditions under which payment shall be made for construction, repair, or maintenance, in accordance with such agreement. 2 Geo. V. c. 11, s. 11.

Authority to enter into agreement with Dominion Government.

25. When any highway leading or adjacent to any city or town separated from the county is widened, straightened, reconstructed or otherwise improved, or requires the expenditure of a greater amount for maintenance and repair to meet the requirements of increased, heavy, constant or other extraordinary traffic to or from such city or town, beyond the requirements which, but for the existence of such city or town, would be deemed those of a standard highway for the locality, the corporation of such city or town by by-law passed with the assent of at least two-thirds of the members of the council thereof may agree with the corporation of the county to contribute such additional cost, or a proper proportion of the cost, or that the amount of the contribution of such city or town shall be determined by arbitration under *The Municipal Act*, and may, without the assent of the electors, provide by by-law for the issue of debentures payable in not more than twenty years from the date of the issue thereof to raise the amount agreed upon or awarded, or may agree with the corporation of the county for the payment of such amounts in annual instalments to be raised by annual special rate upon the rateable property in the city or town. 2 Geo. V. c. 11, s. 12.

Contribution of cities, etc., to improvement of county roads.

Rev. Stat. c. 192.

Assuming main roads as county roads and assessing townships specially benefited.

26. The council of any county may assume as a county road under this Act, any main or leading road through or within such county, and where such road or roads do not serve all townships equally, the county council may, with the approval of the Minister, omit from assessment any township or townships through which such road does not pass, or may assess any or each township through which such road passes for a larger or smaller amount in order to equitably assess the cost; or the council of any county in which a system of roads is established under this Act may, upon the application of a township council, and with the approval of the Minister, levy a special rate upon the township for the construction, improvement or maintenance of the road within such township. 2 Geo. V. c. 11, s. 13.

Annual statement by county to Department.

27.—(1) The treasurer of every county shall, before the first day of March in each year, make up and transmit to the Minister a detailed and audited statement of all expenditure upon, or in connection with, county roads or bridges for the next preceding year.

Form of statement.

(2) The statement shall be in such form as the Minister may direct.

Publication.

(3) The treasurer shall forthwith publish the statement at least once in a newspaper published in the county town.

Delivery of copies to electors.

(4) The clerk of the county council shall procure not less than one hundred copies of the statement and shall deliver or transmit by post one of such copies to such of the electors as shall first make request for the same. 2 Geo. V. c. 11, s. 5.

AN ACT RESPECTING COLONIZATION ROADS.

R.S.O. 1914, c. 41, amended by 4 Geo. V. c. 17.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Short title.

1. This Act may be cited as *The Colonization Roads Act.* 3-4 Geo. V. c. 11, s. 1.

2. In this Act, "Minister" shall mean Minister of Public Works. *New.*

Grants for colonization roads.

3. Grants may be made of such sums as may be appropriated for that purpose from time to time by this Legislature for the construction or repair or to aid in the construction or repair of such Colonization roads as may be deemed necessary in any unsurveyed or unorganized portions of Ontario, or in organized townships where roads are required to give access through unoccupied or sparsely occupied districts, or through districts unfit for cultivation or settlement, and such other roads as this Legislature upon the recommendation of the Minister deems necessary for the proper settlement and development of that portion of Ontario referred to in section 4. 3-4 Geo. V. c. 11, s. 2.

By-laws designating highways for improvement.

4.—(1) The council of any municipality comprising one or more townships or a portion of a township or portions of one or more townships in any provisional judicial district or in the Provisional County of Haliburton, and the council of any township or union of townships in that portion of Ontario in which money is being expended in the building of Colonization roads, may prepare and approve a by-law or by-laws designating any highway or highways in the municipality as highways to be improved under this Act, stating the amount to be expended therefor, but such by-law shall not be finally passed until the same has been submitted to the Minister, who may approve, alter or modify the same.

Confirmation.

(2) The council may finally pass any by-law which has been so submitted to the Minister and approved, altered or modified by him, and it shall not be necessary to introduce and re-submit any by-law so modified or altered. 3-4 Geo. V. c. 11, s. 3.

Amount of grant.

5. Upon the report and recommendation of the Minister the Lieutenant-Governor in Council may direct that any sum being not less than one-third and not more than two-thirds of the estimated cost of the work upon the highways designated by such by-law as approved or modified by the minister may be paid to the municipality out of any appropriation made by this Legislature for that purpose. 3-4 Geo. V. c. 11, s. 4.

Supervision and inspection.

6. Any work undertaken under this Act shall be carried out under the supervision of an inspector approved by the Minister for that purpose, and shall conform to the regulations prescribed by the Department of Public Works. 3-4 Geo. V. c. 11, s. 5.

Payment of grant.

7. Upon the completion of any work of road improvement in pursuance of a by-law passed in accordance with section 4 of this Act or at any time during the progress of such work, the council of the municipality undertaking such work may submit to the Minister a statement setting forth the cost of such work to date, together with the declaration of the treasurer of such municipality that such statement is correct, and also the report of the inspector approved by the Minister, that such work is in accordance with the regulations of the Department of Public Works, and on receipt of such statement and certificate by the Treasurer of Ontario, certified and approved by the proper officer of the Department of Public Works, the Lieutenant-Governor in Council may direct the payment to the corporation of such municipality out of any money appropriated for such purpose of a sum not less than one-third and not more than two-thirds of the amount of such cost. 3-4 Geo. V. c. 11, s. 6.

Right of municipality to contribute labour in lieu of money.

8. The proportion of the cost to be borne by any township or union of townships receiving aid under this Act, may be paid in money, or may with the approval of the Minister, be contributed in labour or partly in money and partly in labour, estimated at the rate of two dollars for a day of ten hours of faithful work, by each man employed, and four dollars a day of ten hours' faithful work for a man and team, but all such work shall be done under the control and to the satisfaction of the Inspector approved by the Minister, and shall be certified by him. 3-4 Geo. V. c. 11, s. 7.

Payment of grants.

9. The money required to meet any expenditure under this Act shall be paid by the Treasurer of Ontario to the persons entitled thereto upon the recommendation of the Minister out of such money as may be from time to time appropriated by this Legislature for that purpose. 3-4 Geo. V. c. 11, s. 8.

Time for presenting petitions.

10. All petitions or by-laws for work under this Act the cost of which is to be paid in whole or in part by Ontario shall be submitted to the Minister not later than ten days after the commencement of the session of the Assembly at which the money may be voted. 3-4 Geo. V. c. 11, s. 9.

Disqualification from service as inspector, etc.

11. No member of the Council of any Municipality receiving grants of money for road purposes from Ontario shall be appointed or act as Inspector, foreman or in any other capacity upon the road work carried out under Section 4, and any such member who is appointed or who acts or is employed in contravention of this section shall be disqualified from sitting or voting in the Council of which he was a member at the time of his appointment or employment. 3-4 Geo. V. c. 11, s. 10.

Powers of municipal corporations in carrying out Act.

12. Every municipal corporation which avails itself of the provisions of The Colonization Roads Act shall have and may exercise all the powers necessary for the carrying out of the provisions of the said Act by a municipal corporation, and every by-law and resolution passed under the said Act which is approved by the Lieutenant-Governor in Council shall be valid and binding, notwithstanding any irregularity therein, or in the manner of passing the same, and shall not be open to question upon any grounds whatsoever. 4 Geo. 5, c. 17, s. 2.

AN ACT TO REGULATE TRAVELLING ON PUBLIC HIGHWAYS AND BRIDGES.

R.S.O. 1914, c. 206.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Short title.

1. This Act may be cited as *The Highway Travel Act.* 2 Geo. V. c. 47, s. 1.

Interpretation, "Vehicle."

2. In this Act "Vehicle" shall include a vehicle drawn by one or more horses, or other animals, a traction engine and a motor vehicle. 2 Geo. V. c. 47, s. 2.

Highways.

Vehicles meeting others.

3.—(1) Where a person travelling or being upon a highway in charge of a vehicle meets another vehicle, he shall turn out to the right from the centre of the road, allowing to the vehicle so met one-half of the road.

Vehicles meeting bicycles, etc.

(2) Where a person travelling or being upon a highway in charge of a vehicle meets a person travelling upon a bicycle or tricycle he shall, where practicable, allow him sufficient room on the travelled portion of the highway to pass to the right. 2 Geo. V. c. 47, s. 3.

Vehicles or horsemen overtaken by others.

4.—(1) Where a person travelling or being upon a highway in charge of a vehicle, or on horse back, is overtaken by any vehicle or horseman travelling at greater speed, the person so overtaken shall quietly turn out to the right and allow such vehicle or horseman to pass.

Vehicles or horsemen overtaking others.

(2) Any person so overtaking another vehicle or horseman shall turn out to the left so far as may be necessary to avoid a collision with the vehicle or horseman so overtaken, and the person so overtaken shall not be required to leave more than one-half of the road free.

Bicycles and tricycles overtaken by vehicles or horsemen.

(3) Where a person travelling or being upon a highway on a bicycle or tricycle is overtaken by a vehicle or horseman travelling at a greater speed, the person so overtaken shall quietly turn out to the right and allow such vehicle or horseman to pass and the person so overtaking bicycle or tricycle shall turn out to the left so far as may be necessary to avoid a collision.

Bicycle overtaking vehicle, horseman or foot passenger to give warning.

(4) Where a person travelling upon a highway on a bicycle or tricycle overtakes any vehicle or horseman travelling at less speed, or a person travelling on foot, the person on the bicycle or tricycle shall give to the other person audible warning of his approach before attempting to pass. 2 Geo. V. c. 47, s. 4.

Driver unable to turn out is to stop.

5.—(1) Where one vehicle is met or overtaken by another, if by reason of the weight of the load on either of the vehicles so meeting or on the vehicle so overtaken, the driver finds it impracticable to turn out, he shall immediately stop, and, if necessary for the safety of the other vehicle, and if required so to do, he shall assist the person in charge thereof to pass without damage.

Portable and traction engines meeting or overtaken by other vehicles.

(2) Where a portable or traction engine is met or overtaken on a highway by a vehicle drawn by a horse or other animal, or by a horseman, the driver of the engine shall, if practicable, turn out to the right and give such vehicle or horseman at least one-half of the road, and shall in all cases stop and remain stationary until the vehicle or horseman has safely passed, and shall, if requested by the driver of the vehicle or by the horseman, assist such driver or horseman to pass without damage.

Stopping engine.

(3) Every person in charge of a portable or a traction engine, and being upon a highway and about to meet or be passed by a vehicle drawn by a horse or other animal, or by a horseman, shall stop when at a distance of not less than one chain from such vehicle or horseman and shall remain stationary until the vehicle or horseman shall have safely passed such engine.

Lights to be carried ahead of engine.

(4) Where any such engine is using a highway or bridge between sunset and sunrise, it shall be the duty of all persons in charge thereof to see that some person shall walk, ride or drive ahead of it, carrying a light so as to give warning to persons in charge of approaching vehicles or animals, such person with such light to be and continue at least one chain in front of the engine; and it shall be the duty of such person also to warn the driver of such engine to stop when an animal or vehicle is drawing near, and also to warn the person in charge of such animal or vehicle of such engine.

Lights to be carried on engine

(5) Every such engine shall, after sunset and before sunrise, carry a bright red light in a conspicuous place in front, and a green light on the rear of the engine or of any vehicle which may be attached to it.

Noises not to be made when passing horses, etc.

(6) It shall be the duty of the driver or of the person in charge of any such engine to see that it makes no noise by whistling or otherwise when any horse or animal is passing or is near or is about to pass the same on any highway. 2 Geo. V. c. 47, s. 5.

Drunkenness of driver or rider.

6. Where a person in charge of a vehicle or of a horse or other animal used as a means of conveyance, travelling or being on a highway, is, through drunkenness, unable to drive or ride the same with safety to other persons travelling on or being upon the highway, he shall incur the penalties imposed by this Act. 2 Geo. V. c. 47, s. 6.

Racing and disorderly conduct.

7. No person shall race with or drive furiously any horse or other animal, or shout, or use any blasphemous or indecent language upon any highway. 2 Geo. V. c. 47, s. 7.

8. Every person travelling upon a highway with a sleigh, sled, or cariole, drawn by a horse or other animal, shall have at least two bells attached to the harness. 2 Geo. V. c. 47, s. 8. Sleigh bells.

9. Where a person travelling upon a bicycle or tricycle in a northerly or westerly direction upon the central strip between the double tracks of a surface railway meets another person on a bicycle or tricycle travelling in an opposite direction he shall turn out to the right, allowing to such other person the whole of the central strip. 2 Geo. V. c. 47, s. 9. Bicycles on devil strips.

Bridges.

10.—(1) The person who has the superintendence of any bridge exceeding thirty feet in length may cause to be put up at each end thereof, conspicuously placed, a notice legibly printed, in the following form: Notice to be posted at bridges.

"Any person or persons riding or driving on or over this bridge at a faster rate than a walk will, on conviction thereof, be subject to a fine, as provided" Form of.

(2) A person who injures or interferes with such notice shall incur a penalty of not less than $1 or more than $8. Penalty for defacing.

(3) If, while such notice continues up, a person rides or drives a horse or other animal on or over such bridge at a pace faster than a walk, he shall incur the penalties imposed by this Act. 2 Geo. V. c. 47, s. 10. Violation of prohibition notice.

Penalties; Recovery and Application of.

11. Where not otherwise specially provided, any person contravening this Act shall incur a penalty of not less than $1 nor more than $20. 2 Geo. V. c. 47, s. 11. Generally.

12. No penalty or imprisonment shall be a bar to the recovery of damages by the injured person. 2 Geo. V. c. 47, s. 12. Right to damages reserved.

13. Every fine when collected shall be paid to the treasurer of the local municipality or place in which the offence was committed, and shall be applied to the general purposes thereof, unless the offence was committed on a road or bridge, owned by a company, or person, and such company, or person, or the officer or servant of such company, or person is the complainant, in which case the penalty when collected shall be paid over to such company, or person. 2 Geo. V. c. 47, s. 13. Application of penalties.

14. The penalties imposed by or under the authority of this Act shall be recoverable under *The Ontario Summary Convictions Act.* 2 Geo. V. c. 47, s. 14. Recovery. Rev. Stat. c. 90.

AN ACT TO REGULATE THE SPEED AND OPERATION OF MOTOR VEHICLES ON HIGHWAYS.

R.S.O. 1914, c. 207. Amended by 4 Geo. V., c. 36.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

Short title.

1. This Act may be cited as *The Motor Vehicles Act.* 2 Geo. V. c. 48, s. 1.

Interpretation.

2. In this Act,

"Highway."

(*a*) "Highway" shall include public park, parkway and driveway.

"Motor vehicle."

(*b*) "Motor vehicle" shall include automobile, locomobile, motor bicycle, and any other vehicle propelled or driven otherwise than by muscular power; but shall not include the cars of electric or steam railways, or other motor vehicles running only upon rails or a traction engine within the meaning of *The Traction Engines Act.*

Rev. Stat. c. 212.

"Peace officer."

(*c*) "Peace Officer" shall include a mayor, warden, reeve, sheriff, deputy sheriff, sheriff's officer, justice of the peace, gaoler or keeper of a prison, and a police officer, police constable, bailiff, constable or other person employed for the preservation and maintenance of the public peace, or for the service or execution of civil process. 2 Geo. V. c. 48, s. 2.

Registration fee.

3.—(1) The owner of every motor vehicle driven on a highway shall pay to the Provincial Secretary a registration fee for such motor vehicle.

Permits for vehicles.

(2) The Provincial Secretary shall issue for each motor vehicle so registered a numbered permit stating that such motor vehicle is registered in accordance with this Act, and shall cause the name of such owner, his address and the number of his permit, to be entered in a book to be kept for such purpose.

Regulations.

(3) The Lieutenant-Governor in Council may make regulations regarding renewals and transfers of such permits, the payment of fees therefor, the amount and time of payment of such fees, and the registration and operation of motor vehicles owned by manufacturers or dealers and not kept by them for private use. 2 Geo. V. c. 48, s. 3.

Regulations.

(4) The Lieutenant-Governor in Council may make regulations

(*a*) For the appointment of permanent, special or temporary constables, servants or officers for enforcing or carrying out the provisions of this Act or of any regulations made thereunder;

(*b*) For defining the duties and powers of and for fixing the salaries, allowances and expenses to be paid to such constables, servants or officers.

(5) Such salaries allowances and expenses for the purposes mentioned in subsection 4 shall be payable out of any sum appropriated by this Legislature for the purposes mentioned in subsection 4. 3-4 Geo. V. c. 52, s. 1.

Licenses for paid drivers.

4.—(1) No person shall for hire, pay or gain drive a motor vehicle on a highway unless he is licensed to do so, and no person shall employ anyone so to drive a motor vehicle who is not so licensed.

Terms of license.

(2) The license for such purpose may be issued by the Provincial Secretary to such person for such time and upon such terms and subject to such regulations and restrictions as the Lieutenant-Governor in Council may prescribe. 2 Geo. V. c. 48, s. 4.

Certificate from two members of Ontario Motor League prior to granting license.

(3) A license shall not be issued to a person who drives a motor vehicle for hire, pay or gain unless and until he files in the office of the Provincial Secretary a certificate signed by two members of the Ontario Motor League appointed for that purpose by the Lieutenant-Governor in Council and residing in the municipality in which the applicant for the license resides, and also by the chief constable of that municipality stating that they have examined the applicant and that he is a fit and proper person to be so licensed, having regard to his character, physical fitness, ability to drive and knowledge of the rules of the road.

(4) If there are not two such appointed members residing in the municipality the certificate may be signed by two such appointed members residing in the municipality nearest to that in which the applicant resides. 3-4 Geo. V. c. 52, s. 2.

Production of license.

5. A license must be produced by any person driving a motor vehicle for hire, pay or gain when demanded by a peace officer. 2 Geo. V. c. 48, s. 5.

Alarm bell to be sounded at crossings, etc.

6.—(1) Every motor vehicle shall be equipped with an alarm bell, gong or horn, and the same shall be sounded whenever it shall be reasonably necessary to notify pedestrains or others of its approach.

Lamps.

(2) Whenever on a highway after dusk and before dawn, every motor vehicle shall carry on the front thereof a lighted lamp in a conspicuous position. 2 Geo. V. c. 48, s. 6.

(3) In the case of a motor bicycle with a side-car attached a lighted lamp shall also be attached to the outside edge of the side-car. 4 Geo. V. c. 36, s. 2.

Marker on back of motor bicycle showing number of permit.

7. A motor bicycle while being driven on a highway shall have exposed on the back thereof a marker furnished by the Provincial Secretary showing in plain figures not less than three inches in height the number of the permit of such motor bicycle. 2 Geo. V. c. 48, s. 7.

Marker on front and back of other motor vehicles showing number of permit.

8.—(1) Every motor vehicle other than a motor bicycle, while being driven on a highway, shall have attached to and exposed on the front and back thereof, in a conspicuous position, a marker furnished by the Provincial Secretary showing in plain figures not less than five inches in height the number of the permit issued for the current year. 2 Geo. V. c. 48, s. 8, (1); 4 Geo. V. c. 36, s. 4.

Position of marker.

(2) The marker on the front shall be as far forward and as high from the ground as may be necessary to render it distinctly visible, and the marker on the back shall be so placed that the lower edge thereof shall not be lower than the body of the motor vehicle; provided that this subsection so far as relating to the position of the marker on the back shall not apply to motor trucks or other motor vehicles for the delivery of goods. 2 Geo. V. c. 48, s. 8, (2); 4 Geo. V. c. 36, s. 1.

Position of lamp.

(3) Every such motor vehicle shall carry a lamp so placed as to illuminate conspicuously at all times between dusk and dawn the number placed on the back of the vehicle. 2 Geo. V. c. 48, s. 8, (3).

No other numbers to be exposed.

9.—(1) No number other than that upon the marker furnished by the Provincial Secretary shall be exposed on any part of a motor vehicle.

Numbers to be kept clean.

(2) The number shall be kept free from dirt and obstruction and the markers shall be so affixed that the numbers may be at all times plainly visible.

Search light.

(3) No motor vehicle shall carry what is known to the trade as a search light. 2 Geo. V. c. 48, s. 9.

Exceptions as to residents of other Provinces.

10.—(1) The provisions of section 3, 7, 8 and 9, shall not apply to a motor vehicle owned by any person who does not reside or carry on business in Ontario for more than three consecutive months in each year, if the owner thereof is a resident of some other Province of Canada, and has complied with the provisions of the law of the Province in which he resides as to registration of a motor vehicle and the display of the registration number thereon;

Limited application.

(2) This section shall apply to such person only to the extent to which under the laws of the Province in which he resides like exemptions and privileges are granted with respect to a motor vehicle registered under the laws of and owned by residents of Ontario. 3-4 Geo. V. c. 52, s. 3.

Rate of speed.

11.—(1) No motor vehicle shall be driven upon any highway within a city, town or village at a greater rate of speed than fifteen miles an hour, or upon any highway outside of a city, town or village at a greater rate of speed than twenty miles an hour; but the council of a city, town, township or village may by by-law set apart any highway or any part thereof on which motor vehicles may be driven at a greater rate of

Exception.

speed for the purpose of testing the same, and may pass by-laws for regulating and governing the use of any such highway or part thereof for such purpose. 2 Geo. V. c. 48, s. 10.

Reckless driving.

(2) Notwithstanding the provisions of subsection 1 any person who drives a motor vehicle on a highway recklessly or negligently, or at a speed or in a manner which is dangerous to the public, having regard to all the circumstances, including the nature, condition and use of the highway and the amount of traffic which actually is at the time, or which might reasonably be expected to be on the highway, shall be guilty of an offence under this Act. 2 Geo. V. c. 48, s. 11.

Racing.

12. No person shall drive a motor vehicle upon a highway, in a race or on a bet or wager. 2 Geo. V. c. 48, s. 12.

Persons under 18 not to drive.

13. No person under the age of eighteen years shall drive a motor vehicle. 2 Geo. V. c. 48, s. 13.

Intoxicated persons not to drive.

14. No intoxicated person shall drive a motor vehicle. 2 Geo. V. c. 48, s. 14.

Manner of passing standing street car.

15. When a motor vehicle meets or overtakes a street car which is stationary for the purpose of taking on or discharging passengers the motor vehicle shall not pass the car on the side on which passengers are getting on or off until such passengers have got on or got safely to the side of the street as the case may be. 3-4 Geo. V. c. 52, s. 4.

Approaching driven or ridden horses.

16.—(1) Every person having the control or charge of a motor vehicle shall, when upon a highway and approaching any vehicle drawn by a horse, or a horse upon which any person is riding, operate, manage and control such motor vehicle in such manner as to exercise every reasonable precaution to prevent the frightening of such horse and to ensure the safety and protection of any person riding or driving the same, and outside the limits of any city or town shall not approach such horse within one hundred yards or pass the same going in the opposite direction at a greater rate of speed than seven miles an hour, and if going in the same direction shall signal his desire to pass and give the rider or driver an opportunity to turn out so that he may be passed with safety, and if any such horse going in the opposite direction appears to be frightened or if such person is signalled so to do, he shall stop such motor vehicle, including the motor, and shall remain stationary so long as may be necessary to allow such rider or driver to pass or until directed by him to proceed and in case any animal ridden or driven by such rider or driver appears to be frightened, such person and the occupants of the motor vehicle shall render assistance to such rider or driver. 2 Geo. V. c. 48, s. 16.

Rate of speed.

Duty to stop.

And to assist.

Unnecessary noise.

(2) A person having the control or charge of a motor vehicle shall not sound any bell, horn or other signalling device so as to make an unreasonable noise, and an operator of any motor vehicle shall not permit any unreasonable amount of smoke to escape from the said motor

vehicle, nor shall such operator at any time, by cutting out the muffler or otherwise, cause such motor vehicle to make any unnecessary noise. 3-4 Geo. V. c. 52, s. 5.

Passing funeral procession.

17. The driver of a motor vehicle upon any highway outside the limits of a city shall upon meeting or overtaking a funeral procession stop his vehicle including the motor or where practicable shall turn out into an intersecting highway or lane until the funeral procession has passed. 2 Geo. V. c. 48, s. 17.

Duty of person in charge in case of accident.

18. If an accident occurs to any person on foot or horseback, or in a vehicle, or to any horse or vehicle in charge of any person, owing to the presence of a motor vehicle on a highway, the person in charge of such motor vehicle shall return to the scene of the accident and give in writing to anyone sustaining loss or injury his name and address, and also the name and address of the owner of such motor vehicle, and the number of the permit. 2 Geo. V. c. 48, s. 18.

Motor owner responsible.

19. The owner of a motor vehicle shall be responsible for any violation of this Act or of any regulation prescribed by the Lieutenant-Governor in Council, unless at the time of such violation the motor vehicle was in the possession of a person not being in the employ of the owner, who had stolen it from the owner. 2 Geo. V. c. 48, s. 19; 4 Geo. V. c. 36, s. 3.

Exception.

Rev. Stat. c. 192.

20. No provision of any by-law heretofore or hereafter passed under paragraph 1 of section 406 of *The Municipal Act,* which is inconsistent with the provisions of this Act shall affect or apply to motor vehicles. 2 Geo. V. c. 48, s. 20; 3-4 Geo. V. c. 52, s. 6.

Power to revoke permit or license.

21. The Provincial Secretary may at any time for misconduct or infraction of the provisions of this Act or of any regulation thereunder by an owner or driver of a motor vehicle suspend or revoke any permit or license. 2 Geo. V. c. 48, s. 21.

Distribution of copies of Act and lists of permits and licenses.

22. The Provincial Secretary shall furnish all Clerks of the Peace with copies of this Act and of the regulations thereunder for distribution to the constables of all counties, districts and local municipalities, and he shall also furnish copies of this Act to the clerks of all local municipalities, to be posted up in conspicuous places, and shall also furnish on the first days of May and September in each year to the clerks of all such municipalities lists of all persons to whom permits and licenses are issued. 2 Geo. V. c. 48, s. 22.

Onus of disproving negligence.

23. When loss or damage is sustained by any person by reason of a motor vehicle on a highway, the onus of proof that such loss or damage did not arise through the negligence or improper conduct of the owner or driver of the motor vehicle shall be upon the owner or driver. 2 Geo. V. c. 48, s. 23.

Penalties.

24.—(1) Any person who violates any of the provisions of sub-sections 1 or 2 of section 8, subsection 1 of section 9, or sections 12, 14 or 18 shall be liable for the first offence to a penalty of $50 or one week's imprisonment or both; for the second offence to a penalty of $100 or one months imprisonment or both, and for the third or any subsequent offence to imprisonment not exceeding six months. 2 Geo. V. c. 48, s. 24, (1); 3-4 Geo. V. c. 52, s. 7.

Convictions for subsequent offences.

(2) On a charge for a second, third or subsequent offence under this section, a conviction need not be shown to be for an offence against the same section, but a conviction for an offence against subsections 1 or 2 of section 8, subsection 1 of section 9, or sections 12, 14 or 18 shall be deemed to be a prior conviction. 2 Geo. V. c. 48, s. 24, (2); 3-4 Geo. V. c. 52, s. 8.

When chauffeur may be disqualified.

25.—(1) A Police Magistrate or Justice of the Peace before whom a person is convicted of an offence under this Act, if the person convicted is required to hold a license under section 4 and does not hold such license, may declare him disqualified to hold such a license for such time as the Police Magistrate or Justice of the Peace thinks fit and shall so report with the certificate of the conviction to the Provincial Secretary.

Convictions to be endorsed on license.

(2) If the person convicted holds a license issued under section 4, the Police Magistrate or Justice of the Peace shall cause particulars of the conviction, if for an offence against section 4, subsections 1 or 2 of section 8, subsection 1 or 2 of section 9, sections 11, 12, 14, 16, 17 or 18, to be endorsed upon such license, and if such conviction is a third conviction, shall confiscate such license and any badge issued therewith, and shall forward the same with the certificate of the conviction to the Provincial Secretary.

Production of license.

(3) A person so convicted if he holds a license issued under section 4 shall produce the license within a reasonable time for the purpose of endorsement, and if he fails to do so shall be guilty of an offence under this Act. 2 Geo. V. c. 48, s. 25.

Justice to certify conviction to Provincial Secretary.

26.—(1) A Police Magistrate or Justice of the Peace who makes a conviction under this Act shall forthwith certify the same to the Provincial Secretary, setting out the name, address and description of the person so convicted, the number of the permit of the motor vehicle with which the offence was committed, the number of the section of the Act contravened and the time the offence was committed, and if such offence was committed by a person licensed under section 4 the number of the license and the name, address and description of his employer, and if three such convictions for an offence against subsections 1 or 2 of section 8, subsection 1 of section 9, or sections 12, 14 or 18, are made against the same person the permit of the motor vehicle with which the offence, for which such third conviction was made, was committed, or the license issued under section 4, or both, may be cancelled and the offender shall not be entitled to a permit or license for a period of two years thereafter. 2 Geo. V. c. 48, s. 26, (1): 3-4 Geo. V. c. 52, s. 9.

Costs of certificate.

(2) The Police Magistrate or Justice of the Peace shall be entitled to add to the costs of the conviction twenty-five cents for his costs of the certificate.

Proof of prior convictions.

(3) A copy of the certificate, certified by the Provincial Secretary or Assistant Provincial Secretary under the seal of the Provincial Secretary, shall be *prima facie* evidence of the conviction. 2 Geo. V. c. 48, s. 26, (2-3).

Impounding motor vehicle.

27.—(1) In the event of a third or subsequent conviction under sections 3, 4, 12, 13, 14 or 18, the motor vehicle driven by the person convicted at the time of committing the offence of which he was convicted, shall be seized, impounded and taken into the custody of the law for a period of three months. 2 Geo. V. c. 48, s. 27, (1); 3-4 Geo. V. c. 52, s. 10.

Storage of vehicles and lien therefor. Rev. Stat. c. 140.

(2) Such motor vehicle shall be stored where the convicting Police Magistrate or Justice of the Peace shall direct, and all costs and charges for the care or storage thereof shall be in lien upon such motor vehicle, and the same may be enforced in the manner provided by *The Mechanics' and Wage-Earners' Lien Act.*

Release of vehicle on security given by owner.

(3) If the person so convicted gives sufficient security to the convicting Police Magistrate or Justice of the Peace by bond, recognizance or otherwise, that such motor vehicle shall not be operated upon any highway during such period of three months, the same may be delivered to the person so convicted or the owner thereof, and if such motor vehicle is operated upon a highway during such period, it shall be deemed to be operated without a permit. 2 Geo. V. c. 48, s. 27, (2-3).

Owner may be prosecuted.

28. If the employer of a person driving a motor vehicle for hire, pay or gain is present in the motor vehicle at the time of the committing of any offence against this Act, such employer as well as the driver shall be liable to conviction for such offence. 2 Geo. V. c. 48, s. 28.

Penalties.

29. Any person who violates any of the provisions of this Act or of any regulation made thereunder, where a penalty for the offence is not hereinbefore provided, shall incur a penalty not exceeding $10 for the first offence, not exceeding $20 for the second offence, not exceeding $30 for the third offence and not exceeding $50 for any subsequent offence. 2 Geo. V. c. 48, s. 29; 3-4 Geo. V. c. 52, s. 11.

Application of penalty where constable or municipal officer prosecutes.

30. Where a constable or other officer of a municipality is the prosecutor any penalty imposed under this Act shall, when received, be paid over by the convicting Police Magistrate or Justice of the Peace to the treasurer of the municipality. 2 Geo. V. c. 48, s. 30.

Arrests by peace officer without warrant.

31.—(1) Every peace officer who on reasonable and probable grounds believes than an offence against any of the provisions of sub-sections 1 or 2 of section 8, subsection 1 of section 9, or sections 12, 14 or 18 has been committed, whether it has been committed or not, and who, on reasonable and probable grounds, believes that any person has committed that offence, may arrest such person without warrant, whether such person is guilty or not. 2 Geo. V. c. 48, s. 31, (1); 3-4 Geo. V. c. 52, s. 12.

Assisting peace officers.

(2) Every person called upon to assist a peace officer in the arrest of a person suspected of having committed any such offence may assist if he knows that the person calling on him for assistance is a peace officer, and does not know that there are no reasonable grounds for the suspicion.

Arresting on view.

(3) Every person may arrest without warrant any person whom he finds committing any such offence. 2 Geo. V. c. 48, s. 31, (2-3).

Detaining vehicle when arrest made.

32. A peace officer or other person making an arrest without warrant may detain the motor vehicle with which the offence was committed until the final disposition of any prosecution under this Act, but such motor vehicle may be released on security for its production being given to the satisfaction of a Justice of the Peace. 2 Geo. V. c. 48, s. 32.

Duty of person arresting without warrant.

33. A peace officer or other person making an arrest without warrant shall with reasonable diligence take the person arrested before a Justice of the Peace, to be dealt with according to law. 2 Geo. V. c. 48, s. 33.

Recovery of penalties. Rev. Stat. c. 90.

34. The penalties provided by this Act shall be recoverable under *The Ontario Summary Convictions Act*. 2 Geo. V. c. 48, s. 34.

Section 285 of the Criminal Code reads as follows:

Every one is guilty of an indictable offence and liable to two years' imprisonment who, having the charge of any carriage or vehicle, by wanton or furious driving, or racing or other wilful misconduct, or by wilful neglect, does or causes to be done any bodily harm to any person.

AN ACT RESPECTING DOUBLE TRACKS IN SNOW ROADS.

R.S.O. 1914, c. 208.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Short title.

1. This Act may be cited as *The Snow Roads Act*. 2 Geo. V. c. 49, s. 1.

Interpretation—"vehicle."

2. In this Act "Vehicle" shall mean a vehicle drawn by one or more horses or other animals or propelled by any motive power. 2 Geo. V. c. 49, s. 2.

Powers of county council.

3. The council of a county may provide, by by-law, for the making of a double track, during the season of sleighing in each and every year, upon such leading highways within the county, whether or not county roads, as such council deems advisable. 2 Geo. V. c. 49, s. 3.

Nature of tracks.

4. Where a county council has passed such a by-law, the double track shall be so made that one vehicle may pass another without being obliged to turn out when meeting. 2 Geo. V. c. 49, s. 4.

Right of road.

5. Every vehicle shall travel in the right-hand track, and any person driving or propelling his vehicle in the wrong track shall leave it when he meets a vehicle entitled to use such track 2 Geo. V. c. 49, s. 5.

Duties and powers of path-masters or road masters.

6.—(1) A county council may also provide, by by-law, that pathmasters appointed by township councils shall cause the highways on which double tracks are to be made to be kept open for travel within their respective municipalities, or, if there are no such pathmasters available, may appoint roadmasters to perform that duty.

Calling out persons liable to perform Statute Labour.

(2) Such pathmasters or roadmasters shall have power to call out persons liable to perform statute labour, to assist in keeping open such highways within their respective municipalities, and may give to the persons employed in so doing certificates of having performed statute labour to the amount of the days' work done, and such work shall be allowed for in the next season's statute labour.

Application of commutation of Statute Labour.

(3) The county council may also provide for the application by such township councils of so much of the commutation of statute labour fund as may be necessary for the keeping open of such highways within their respective municipalities. 2 Geo. V. c. 49, s. 6.

County acting on default by township.

7. If a township council neglects or refuses to keep such highways open for travel as provided by the next preceding section, the county council may do so, and may impose upon the township so in default a rate sufficient for that purpose, and such rate shall be levied and collected in the manner provided by *The Assessment Act* for the collection of county rates. 2 Geo. V. c. 49, s. 7.

Rev. Stat. c. 195.

8. Any person liable to perform statute labour who refuses or neglects to turn out and work under any pathmaster or roadmaster who warns him out for that purpose under the authority of this Act, shall incur a penalty of not less than $1 or more than $20. 2 Geo. V. c. 49, s. 8. Penalty for persons refusing to work.

9. Any person travelling with his vehicle in the wrong track, and refusing or neglecting to leave the same when met by a person who is rightfully travelling therein with his vehicle shall incur a penalty of not less than $1 or more than $20. 2 Geo. V. c. 49, s. 9. Penalty for refusing to turn out of wrong track.

10. The penalties mentioned in sections 8 and 9 shall be recoverable under *The Ontario Summary Convictions Act*. 2 Geo. V. c. 49, s. 10. Recovery of penalties. Rev. Stat. c. 90.

11. All the rights and powers by this Act conferred upon councils of counties may be exercised by the councils of townships in districts without county organization. 2 Geo. V. c. 49, s. 11. How Act enforceable in townships in districts.

AN ACT RESPECTING SNOW FENCES.

R.S.O. 1914, c. 211.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Short title.

1. This Act may be cited as *The Snow Fences Act*. 2 Geo. V. c. 52, s. 1.

Powers of councils to require removal of fences.

2.—(1) The council of every township, city, town, and village may pass by-laws requiring the owners or occupiers of lands bordering upon a public highway to take down, alter, or remove any fence which causes an accumulation of snow or drift so as to impede or obstruct travel.

Making compensation therefor.

(2) The council shall make such compensation to the owners or occupants for the taking down, alteration or removal of such fence and for the construction in lieu thereof of some other description of fence approved of by the council, as may be mutually agreed upon, and in default of agreement the compensation shall be determined by arbitration, and three fence-viewers appointed by the council shall be the arbitrators. 2 Geo. V. c. 52, s. 2.

Power in case of neglect or refusal by owner or occupant.

3.—(1) If the owner or occupant refuses or neglects to take down, alter or remove the fence, as required by the council, the council, after the expiration of two months from the time the compensation has been agreed upon or determined by arbitration, may take down, alter, or remove such fence and may construct the fence which has been approved of by the council, and the amount of all costs and charges thereby incurred by the council over and above the amount of compensation may be recovered from such owner or occupant, by action in any Division Court having jurisdiction in the locality, and the amount of the judgment, if not sooner paid, shall be placed by the clerk of the municipality upon the collector's roll against the lands upon or along the boundaries of which the fence is situate, and shall be collected as other taxes.

Right of occupant to deduct amount paid from rent.

(2) Where an occupant, other than the owner, is required to pay such sum, or any part thereof, he may deduct it, and any costs paid by him, from the rent payable by him, or may otherwise recover the same, unless he has agreed with the landlord to pay it.

Duties of arbitrators.

(3) The arbitrators shall examine the premises and shall, if required, hear evidence.

Fees.

(4) The arbitrators shall be entitled to $2 a day, which shall be paid by the corporation of the municipality if the amount of the award exceeds the amount offered by the corporation, otherwise by the owner or occupant.

(5) The award shall be filed in the office of the clerk of the municipality, and an appeal shall lie therefrom to the Judge of the County or District Court of the County or District. Appeal.

(6) The provisions of *The Line Fences Act* shall *mutatis mutandis* apply to such appeal. 2 Geo. V. c. 52, s. 3. Rev. Stat. c. 259, to apply.

4.—(1) Every such council may, on and after the 15th day of November in each year, enter into and upon any lands of His Majesty, or of any corporation or person, situate within the municipality, and lying along any public highway, in or adjoining any such municipality, and may erect and maintain snow fences thereon, subject to the payment of such damages, if any, as may be suffered by the owner or occupant of the lands so entered upon, the amount thereof to be ascertained, if not mutually agreed upon, by arbitration, as provided in section 2. Power to enter on lands.

(2) The snow fences so erected shall be removed on or before the first day of April following. 2 Geo. V. c. 52, s. 4. Removal.

AN ACT TO AUTHORIZE AND REGULATE THE USE OF TRACTION ENGINES ON HIGHWAYS.

R.S.O. 1914, c. 212.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Short title.

1. This Act may be cited as *The Traction Engines Act.* 2 Geo. V. c. 53, s. 1.

Limit of weight.

2. Traction engines not exceeding twenty tons in weight may be used upon any highway subject to the provisions hereinafter contained. 2 Geo. V. c. 53, s. 2.

General Conditions.

Speed.

3. The speed of a traction engine shall at no time in cities, towns and villages exceed the rate of three miles an hour, or elsewhere the rate of six miles an hour. 2 Geo. V. c. 53, s. 3.

Width of wheels.

4. The width of the driving wheels of all such engines shall be at least twelve inches, and the wheels of the trucks or waggon drawn thereby shall be at least four inches in width for the first two tons capacity, load and weight of truck included, and at least an additional half inch for each additional ton. 2 Geo. V. c. 53, s. 4.

(*Note.— As to other precautions to be taken when travelling on highways see The Highways Travel Act, Rev. Stat. c.* 206.)

(*As to the right of cities and towns to prohibit the use of traction engines on certain streets see The Municipal Act, Rev. Stat. c.* 192, *s.* 400, *par.* 49.)

Bridges to be Strengthened.

Strengthening bridges, etc.

5.—(1) Before it shall be lawful to run such engine over any highway whereon no tolls are levied, the person proposing to run the same shall, at his own expense, strengthen all bridges and culverts to be crossed by such engine, and keep the same in repair so long as the highway is so used.

Owners of different engines to contribute.

(2) The cost of such repairs shall be borne by the owners of different engines in proportion to the number of engines run over such bridges or culverts.

Certain threshing engines not affected.

(3) The two preceding subsections shall not apply to engines of less than ten tons in weight used for threshing purposes or for machinery for the construction of roadways.

(4) Before crossing any such bridge or culvert the person proposing to run any traction engine shall lay down on such bridge or culvert planks of sufficient width and thickness to fully protect the flooring or surface of such bridge or culvert from any injury that might otherwise result thereto from the contact of the wheels of such engine; and in default thereof the person in charge and his employer, if any, shall be liable to the corporation of the municipality for all damage resulting to the flooring or surface of such bridge or culvert. 2 Geo. V. c. 53, s. 5. Planks to be laid on surface of bridge.

Special Provisions as to Toll Roads.

6. Before any traction engine is run over a toll road, the person proposing to run the same shall leave a notice in writing to that effect with the keeper of any tollgate on such road at least two months previous to the running of such engine, and the notice shall also contain a correct statement of the weight of the heaviest engine proposed to be used. 2 Geo. V. c. 53, s. 6. Notice before use of roads.

7. The owner of such toll road, within two months after the delivery of such notice and upon receiving security for the cost of the improvements required, may cause all bridges and culverts upon the road to be so strengthened as, in the opinion of the Inspector of Toll Roads, will render them safe for the constant passing of such engines. 2 Geo. V. c. 53, s. 7. Strengthening bridges, etc.

8.—(1) If the owner of such toll road neglects or refuses to comply with the requirements of the next preceding section, the person proposing to run such engine may do the necessary work at his own expense, and his outlay shall be repaid to him by the remission of tolls upon the passage of his engines, trucks and waggons through the gates upon such road until the whole of such outlay is repaid. Rights of owners of engines on default.

(2) The work shall be performed to the satisfaction of the Inspector of Toll Roads. 2 Geo. V. c. 53, s. 8. Approved by Inspector.

9. The owner of such toll road may levy such tolls as may be imposed by him upon the passage of any engine, truck or waggon through every lawful gate; and if the owner of the engine is dissatisfied with the rate of toll, the same shall be determined by the Inspector of Toll Roads. 2 Geo. V. c. 53, s. 9. Tolls.

10. The owner of the road may enforce the payment of such tolls in the manner provided by law for the collection of ordinary tolls upon such road. 3 Geo. V. c. 53, s. 10. Collection of tolls.

Penalties.

Penalty for contravening Act. Rev. Stat. c. 90.

11. Every person who contravenes any of the provisions of this Act shall incur a penalty of not less than $5 or more than $25, recoverable under *The Ontario Summary Convictions Act.* 2 Geo. V. c. 53, s. 11.

Application of penalties.

12. The penalties when collected shall be paid over to the treasurer of the local municipality in which the offence was committed. 2 Geo. V. c. 53, s. 12.

Right to damages reserved.

13. No penalty or imprisonment shall be a bar to the recovery of damages by an injured person. 2 Geo. V. c. 53, s. 13.

AN ACT TO ENCOURAGE THE PLANTING AND GROWING OF TREES.

R.S.O. 1914, c. 213.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Short title.

1. This Act may be cited as *The Tree Planting Act*. 3-4 Geo. V. c. 53, s. 1.

Planting trees on highways, etc.

2.—(1) The owner of land adjacent to a highway, lane, alley, place or square may plant trees on the portion thereof contiguous to his land; but no tree shall be planted that the same is or may become a nuisance or obstruct the reasonable use of a highway or other public thoroughfare.

Property in trees planted by owners.

(2) Every tree so planted shall be the property of the owner of the land adjacent to such highway, lane, alley, place or square, and nearest to such tree.

Trees on boundary lines.

(3) An owner of land may, with the consent of the owner of the adjoining land, plant trees on the boundary between such lands, and every such tree so planted shall be the common property of such owners.

Property in shade and ornamental trees.

(4) Every growing tree, shrub or sapling planted or left standing on either side of a highway for the purposes of shade or ornament shall be the property of the owner of the land adjacent to the highway and nearest to such tree, shrub or sapling. 3-4 Geo. V. c. 53, s. 2.

Municipal by-laws for granting tree bonuses.

3.—(1) The council of any municipality may pass a by-law for paying a bonus not exceeding twenty-five cents for every ash, basswood, beech, birch, butternut, cedar, cherry, chestnut, elm, hickory, maple, oak, pine, sassafras, spruce, walnut, or whitewood tree, planted, under the provisions of this Act, within such municipality on any highway, or on any boundary line or within six feet of such boundary line.

Inspector of trees.

(2) The by-law shall provide for the appointment of an Inspector of trees so planted, or their due protection against injury or removal by any person, including the owner, without the authority of a resolution of the council, and for the conditions on which the bonus may be paid. 3-4 Geo. V. c. 53, s. 3.

Petition for passing by-law.

4.—(1) Not less than thirty municipal electors in a police village may petition the council of the township praying for the passing of a by-law under section 3 to have effect within the limits of the police village, and on receipt of such petition the council may pass a by-law giving effect to it.

Appointment of inspector.

(2) The trustees of such police village shall appoint the Inspector of trees provided for by the by-law, and the amount required for the payment of the bonuses for tree planting under the by-law and the

remuneration of the Inspector shall be raised by a rate upon the assessment for real property, income and business and other assessments in such police village in the manner provided by *The Municipal Act.* 3-4 Geo. V. c. 53, s. 4.

Rev. Stat. c. 192.

Report of Inspector on state of trees.

5.—(1) The Inspector shall make to the council one report for each year, if required so to do, giving the names of all persons entitled to any bonus under the by-law, the number of trees of each species planted, and the amount of bonus to which each person is entitled, and certifying that the trees have been planted for a period of three years, and that they are alive, healthy, and of good form, and upon the adoption of such report the bonus shall be paid.

Limitations of amount of bounty.

(2) The corporation shall not be liable to pay a larger sum in respect of trees planted under this Act than would be payable if the same had been planted at a distance of thirty feet apart, and in no case shall a bonus be granted where the trees are less than fifteen feet apart. 3-4 Geo. V. c. 53, s. 5.

Penalties for injuring trees on highways.

6.—(1) Any person who ties or fastens any animal to or injures or destroys a tree planted and growing upon a highway, lane, alley, place or square, or, if a bonus has been paid therefor, upon any boundary line between lands, or who suffers or permits any animal in his charge to injure or destroy or who cuts down or removes any such tree without having first obtained permission so to do by resolution of the council of the municipality shall incur a penalty not exceeding $25 to be recoverable under *The Ontario Summary Convictions Act.*

Rev. Stat. c. 90.

Application of penalty.

(2) One half of such penalty shall go to the person laying the information, and the other half to the corporation of the municipality within which such tree was growing.

Injuring trees on boundary lines.

(3) Any person who ties or fastens any animal to or injures or destroys any tree growing for the purposes of shade or ornament upon a boundary line between lands or who suffers or permits any animal in his charge to injure or destroy or who cuts down or removes any such tree without the consent of the owners thereof shall incur the like penalty. 3-4 Geo. V. c. 53, s. 6.

Municipal by-laws as to planting and removal.

7. The council of every municipality may pass by-laws to

(*a*) regulate the planting of trees upon highways;

(*b*) prohibit the planting upon the highways of any species of trees which they may deem unsuited for that purpose;

(*c*) provide for the removal of trees planted on a highway contrary to the provisions of any such by-law. 3-4 Geo. V. c. 53, s. 7.

APPENDIX

The Assessment Act, R.S.O, 1914, c. 195.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Apportionment of county rates, how to be based.

89. The council of a county, in apportioning a county rate among the different townships, towns and villages within the county, shall, in order that the same may be assessed equally on the whole rateable property of the county, make the assessment of property equalized in the preceding year the basis upon which the apportionment is made. 4 Edw. VII. c. 23, s. 84.

County Councils to apportion sums required for county purposes.

91. Where a sum is to be levied for county purposes, or by the county for the purposes of a particular locality, the council of the county shall ascertain, and. by by-law, direct what portions of such sum shall be levied in each township, town or village in such county or locality. 4 Edw. VII. c. 23, s. 86.

County Clerk to certify amounts to clerks of municipalities.

92. The county clerk shall forthwith after the county rates have been apportioned certify to the clerk of each municipality in the county, the total amount which has been so directed to be levied therein for the then current year, for county purposes, or for the purposes of any such locality and the clerk of the municipality shall calculate and insert the same in the collector's roll for that year. 4 Edw. VII. c. 23, s. 87.

The Ditches and Watercourses Act, R.S.O., 1914, c. 260:

Includes means for securing outlets for the drainage of roads; and defines the liability of municipalities for drains constructed under this Act, when public highways are benefitted thereby.

The Municipal Drainage Act, R.S.O., 1914, c. 198:

Includes reference to the drainage of roads, and the assessment of a portion of the cost of such work against the public roads benefited.

The Ontario Railway Act, R.S.O., 1914, c. 185:

Defines in various sections the relation of steam and electric railways to public highways and bridges.

The Ontario Telegraph Act, **R.S.O., 1914, c. 180:**

Confers and defines powers of telegraph companies to construct their lines on the public highways.

The Ontario Public Works Act, **R.S.O., 1914, c. 35:**

Refers to works constructed wholly under the authority of the Provincial Department of Public Works, with ownership and control vested wholly in the Province.

The Surveys Act, **R.S.O., 1914, c. 166**

Defines the duties and powers of Ontario Land Surveyors with reference to the survey of road allowances, and the procedure to be followed by municipal councils in obtaining such surveys definitely to establish correct lines.

The City and Suburbs Plans Act, **R.S.O., 1914, c. 194:**

Defines procedure with reference to plans of proposed surveys and subdivisions within or adjacent to cities having a population of 50,000 and over.

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HON. J. O. REAUME

MINISTER PUBLIC WORKS, ONTARIO

ROBERT EDGAR

SECRETARY LABOUR BUREAU

FOURTEENTH REPORT

OF

The Bureau of Labour

OF THE

PROVINCE OF ONTARIO

For the Year Ending December 31st

1913

PRINTED BY ORDER OF
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o His Honour Sir John Morison Gibson, K.C.M.G., K.C., LL.D., etc., etc.,

Lieutenant-Governor of Ontario.

lay it Please Your Honour:

The undersigned has the honour to present herewith for your consideration ıe Report of the Bureau of Labour of the Province of Ontario for the year 1913.

I have the honour to be,

Your Honour's most obedient servant,

J. O. REAUME,

Minister of Public Works.

To the Honourable J. O. Reaume,

Minister of Public Works, Ontario,

Sir,—I have the honour of submitting to you herewith the Fourteenth Report of the Bureau of Labour.

I have the honour to be, Sir,

Your obedient servant,

ROBERT EDGAR,

Secretary.

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FOURTEENTH REPORT

OF THE

BUREAU OF LABOUR

1913

INTRODUCTION

The Fourteenth Annual Report of the Bureau of Labour of the Province of Ontario shows once more the continuous growth and progress of the work of the Bureau.

There has been an increase in the operations of the six Free Employment Bureaus established at Berlin, Brantford, Hamilton, London, Ottawa and Walkerville. Situations have been provided for 1,415 applicants.

The number of returns by municipal clerks have increased, there having been 815, as compared with 807 for 1911, and 786, 769, 756, 704, 559 and 227 for the six preceding years. Much work that should be unnecessary was still needed to obtain this result, many clerks requiring repeated notices before reporting at all, or rendering their returns more complete. The difficulties they profess in this respect continue to show defective bookkeeping and incomplete records, even in some of the urban municipalities. The statistical tables, even though thus incomplete, show satisfactory municipal progress. There were reported 27,912 new buildings erected in 1912, costing $69,539,807; expenditure on permanent improvements, such as roadways, bridges, etc., $8,739,241: and on sanitation, including sewers, $4,008,545. The 19 cities report 17,854 new buildings, costing $51,271,898; expenditure on permanent improvements, $4,444,705; and no sanitation, $3,227,243. The 127 towns reporting (1 defaulting persistently) give 4,255 new buildings, costing $11,067,768; expenditure on public improvements, $2,095,327; and on sanitation, $695,385. The 140 incorporated villages reporting give 653 new buildings, costing $1,312,660; expenditure on permanent improvements, $243,760, and on sanitation, $47,205. The 529 townships or groups of townships reporting, about 13 not doing so, give 5,150 new buildings, costing $5,887,481; expenditure on permanent improvements, $1,955,449; and on sanitation, $43,712. The reports of the clerks, given in detail, supply valuable information as to manufacturing establishments started during the year and openings for other industries.

The statistics given in the last four Annual Reports of public utilities owned and operated by the municipalities are continued, showing that their capitalization has increased to considerably over $45,200,000 for the 223 municipalities making

returns. The 19 cities report assets of this nature amounting to $32,643,235; the towns, $10,503,756, villages, $1,531,840 and townships, $559,688. In another table these public utilities are classified as follows: waterworks, $30,756,198; electric lighting, $10,002,206; gas, $842,748; street railways, $1,566,220; power, $1,100,602; telephone, $808,655; miscellaneous, $161,890.

The schedules returned by local unions have continued to increase in number, being 491, as compared with 477 last year, and 384, 335, 358, 320, 271, and 156 for the six preceding years. Though the increase is to some extent satisfactory, it is evident that these returns are incomplete, some unions still neglecting to give the required information. In all other countries where labour is organized this strange indifference does not prevail, the returns being far more complete, with an evident desire to make the best showing possible for the movement. A few secretaries still continue their practice of stating the hourly wages accurately, but of understating the weekly wages as shown by the hours and rates they mention, apparently dividing the year's wages by the 52 weeks, though the shortage is accounted for by the column giving the average number of days idle. This causes an unnecessary difficulty when claiming the usual rates and hours on public contracts, and as I have before mentioned if the expected Bill regarding Compensation for Industrial Injuries bases payments as in the British Act on the weekly wages, the suggestion by unions following their report will be found useful by those who are studying the relations of capital and labour.

The increase in the number of returns from manufacturers still continues, there being 911 as compared with 867 last year, and 759, 679, 652, 592, 427, and 205 for the previous years. Of these, 89 were too incomplete for tabulation, leaving to be so treated 822 establishments employing 61,637 persons, as compared with 818 employing 57,991 persons, 707 employing 51,095 persons, 642 establishments employing 49,090, 610 employing 39,156, 536 employing 42,646, 384 employing 35,316, and 153 employing 8,505 in the seven previous years. The aggregate number of days in operation in these 822 establishments was 235,000 as compared with 229,473; 202,306; 183,186; 172,573; 154,905; 113,434; and 43,718 in the preceding years. The product was $156,712,991 as compared with $139,990,138; $122,726,571; $111,392,169; $95,479,586; $100,097,507; and $18,473,139 previously. The wages were $37,806,066 as compared with $28,022,416; $23,361,134; $21,392,444; $16,681,496; $19,123,227; $15,869,337; and $3,458,419 in the previous years. The average wage rate per year was $532.70 and per day, $1.81 as compared with $495.10 and $1.74; $467.80 and $1.64; $452.15 and $1.58; $433.99 and $1.58; $459.00 and $1.60; $449.43 and $1.52; and $406.69 and $1.48 previously. As there is no nominal list of the industrial establishments of the Province published by any trustworthy authority, they have to be obtained from various sources and consequently these statistics are not complete. Some manufacturers neglect to reply, and a few refuse to give any information. The 32 categories into which they are divided in the

tables, contain, however, a sufficient number to give a fairly representative idea of the general industrial position.

In the succeeding table, giving in condensed form the increases and decreases in product and in wages, it is shown that the average increase in product in all the classes was 15.89 per cent.: 50 establishments reported unspecified increases, 8 unspecified decreases, and 174 no change from previously. The average increase in wages in all the classes was 20.9 per cent.: 90 establishments reported unspecified increases: no unspecified decreases: and 159 no change from previously. None of the classes reported average decreases in product or in wages. The increases were shared by 43,787 persons.

The notes of increases of wages and decreases of hours of labour though not exhaustive indicate a continued and more wide-spread upward tendency.

Labour legislation, trade disputes, legal decisions, directories of labour organizations, officials of Bureaus of Labour, etc., have received the usual attention and appear in the Report. The correspondence of the Bureau augments continuously. Five thousand copies of the Thirteenth Annual Report were sent out, many in pursuance of special application. Schedules and circulars were mailed as usual to secretaries of unions, clerks of municipalities, and manufacturers. Over one thousand letters were sent out, giving information required, asking for schedules or more complete details, and for similar objects in the scope of the Bureau. Personal interviews were also had in relation to fair wages and hours on public contracts, labour legislation, decisions by the courts, industrial statistics, etc., including requests for information by University and other students of political economy. I was gladly able to supply some data for the enquiry leading to legislation in regard to compensation for industrial injuries.

ROBT. EDGAR,

Secretary,

Bureau of Labour.

MUNICIPAL STATISTICS.

The following is a list of the cities, towns, incorporated villages and townships which responded to the schedules sent out to all the municipal clerks. Succeeding this are the reports in detail from the clerks giving accounts of the industries started in 1912, and the openings for others, besides the statistical information which is tabulated as usual. All the cities, nearly all the towns and villages, and all but about 13 of the townships made returns, the increase that has obtained for some years past being continued, but this was only secured by repeated applications in many cases, both for the reports themselves and for additional information where they were incomplete.

NOTE.—C. for City; Tn. for Town; V. for Village; Tp. for Township.

Aberdeen, Tp.
Abinger, Tp.
Acton, V.
Adelaide, Tp.
Ailsa Craig, V.
Admaston, Tp.
Adolphustown, Tp.
Albermarle, Tp.
Alberton, Tp.
Albion, Tp.
Alexandria, Tn.
Alfred, Tp.
Algona N., Tp.
Algona S., Tp.
Alice & Fraser, Tps.
Alliston, Tn.
Almonte, Tn.
Alnwick, Tp.
Alvinston, V.
Amabel, Tp.
Amaranth, Tp.
Ameliasburg, Tp.
Amherst Island, Tp.
Amherstburg, Tn.
Ancaster, Tp.
Anderdon, Tp.
Anglesea, Tp.
Anson and Hindon, Tps.
Anstruther, Tp.
Appleby, Tp.
Arkona, V.
Armour, Tp.
Arnprior, Tn.
Arran, Tp.
Artemesia, Tp.
Arthur, Tp.
Arthur, V.
Ashby, Tp.
Ashfield, Tp.
Asphodel, Tp.
Assiginack, Tp.
Athens, V.
Athol, Tp.
Atwood, Tp.
Augusta, Tp.
Aurora, Tn.
Awenre, Tp.
Aylmer, Tn.
Ayr, V.

Bagot and Blythfield, Tps.
Balfour, Tp.
Bancroft, V.
Barrie, Tn.
Barrie, Tp.
Barton, Tp.
Bastard and Burgess S., Tps.
Bath, V.
Bathurst, Tp.
Bayfield, V.
Bayham, Tp.
Beamsville, V.
Beaverton, V.
Beckwith, Tp.
Bedford, Tp.
Beeton, V.
Belle River, V.
Belleville, C.
Belmont & Methuen, Tps.
Bentinck, Tp.
Berlin, C.
Bertie, Tp.
Beverley, Tp.
Bexley, Tp.
Biddulph, Tp.
Billings Tp.
Binbrook, Tp.
Blandford, Tp.
Blanshard, Tp.
Blenheim, Tn.
Blenheim, Tp.
Blezard, Tp.
Blind River, Tn.
Bloomfield, V.
Blue, Tp.
Blyth, V.
Blythfield, Tp.
Bobcaygeon, V.
Bolton, V.
Bonfield, Tn.
Bosanquet, Tp.
Bothwell, Tn.
Bowmanville, Tn.
Bracebridge, Tn.
Bradford, V.
Brampton, Tn.
Brant, Tp.

Brantford, C.
Brantford, Tp.
Bridgeburg, V.
Brighton, Tp.
Brighton, V.
Brock, Tp.
Brockville, Tn.
Bromley, Tp.
Brooke, Tp.
Brougham, Tp.
Bruce, Tp.
Bruce Mines, Tn.
Brudenell and Lynedock, Tps.
Brunel, Tp.
Bruton, Tp.
Brussels, V.
Buchanan, Tp.
Bucke, Tp.
Burford, Tp.
Burgess N., Tp.
Burgess S., Tp.
Burk's Falls, V.
Burleigh and Anstruther, Tps.
Burlington, V.
Burpee, Tp.

Cache Bay, Tn.
Caister, Tp.
Caldwell, Tp.
Caledon, Tp.
Caledonia, Tp.
Caledonia, V.
Calvin, Tp.
Camden, Tp.
Camden E., Tp.
Cameron, Tp.
Canborough, Tp.
Cannington, V.
Canonto N., Tp.
Canonto S., Tp.
Caradoc, Tp.
Carden, Tp.
Cardiff, Tp.
Cardinal, V.
Cardwell, Tp.
Carleton Place, Tn.
Carling, Tp.
Carlow, Tp.

Carnarvon, Tp.
Carrick, Tp.
Cartwright, Tp.
Casey, Tp.
Casselman, V.
Cassimer, Jennings and Appleby, Tps.
Cavan, Tp.
Cavendish, Tp.
Cayuga, V
Cayuga N., Tp.
Cayuga S., Tp.
Chaffey, Tp.
Chamberlain, Tp.
Chandos, Tp.
Chapleau, Tp.
Chapman, Tp.
Chapple, Tp.
Charlottenburg, Tp.
Charlotteville, Tp.
Chatham, C.
Chatham, Tp.
Chatsworth, V.
Chelmsford, Tn.
Chesley, Tn.
Chesterville, V.
Chinquacousy, Tp.
Chisholm, Tp.
Chippawa, V.
Christie, Tp.
Clara, Tp.
Clarence, Tp.
Clarendon & Miller, Tps.
Clarke, Tp.
Clifford, V.
Clinton, Tn.
Clinton, Tp.
Clyde, Tp.
Cobalt, Tn.
Cobden, V.
Cobourg, Tn.
Cochrane, Tn.
Cockburn Island, Tp.
Colborne, Tp.
Colborne, V.
Colchester N., Tp.
Colchester S., Tp.
Coldwater, V.
Coleman, Tp.

Collingwood, Tn.
Collingwood, Tp.
Copper Cliff, Tn.
Cornwall, Tn.
Cornwall, Tp.
Courtright, V.
Cramahe, Tp.
Creemore, V.
Crosby N., Tp.
Crosby S., Tp.
Crowland, Tp.
Crozier, Tp.
Culross, Tp.
Cumberland, Tp.

Dack, Tp.
Dalhousie and Sherbrooke N., Tps.
Dalton, Tp.
Darling, Tp.
Dawn, Tp.
Day and Bright, Additional, Tps.
Delaware. Tp.
Delhi, V.
Denbigh, Abinger and Ashby, Tps.
Denison, Tp.
Derby, Tp.
Dereham, Tp.
Deseronto, Tn.
Digby, Tp.
Dilke, Tp.
Dorchester N., Tp.
Dorchester S., Tp.
Douro, Tp.
Dover, Tp.
Downie, Tp.
Draper, Tp.
Drayton, V.
Dresden, Tn.
Drummond, Tp.
Drury, Denison and Graham, Tps.
Dryden, Tn.
Dudley, Tp.
Dumfries N., Tp.
Dumfries S., Tp.
Dummer, Tp.
Dungannon, Tp.
Dundalk, V.
Dundas, Tn.
Dunn, Tp.
Dunnville, Tn.
Durham, Tn.
Dutton, V.
Dymond, Tp.
Dysart, etc., Tps.

Easthope S., Tp.
Easthope N., Tp.
Eastnor, Tp.
Eastview, V.
Edwardsburg, Tp.
Effingham, Tp.
Egremont, Tp.
Ekfrid, Tp.
Elderslie, Tp.
Eldon, Tp.
Elizabethtown, Tp.
Ellice, Tp.
Elma, Tp.
Elmira, V.
Elmsley N., Tp.
Elmsley S., Tp.
Elora, V.
Elzevir, Tp.
Embro, V.
Emily, Tp.
Emo, Tp.
Englehart, Tn.
Enniskillen, Tp.
Ennismore, Tp.
Eramosa, Tp.
Erin, Tp.
Erin, V.
Ernesttown, Tp.
Escott Front, Tp.
Esquesing, Tp.
Essa, Tp.
Essex, Tn.
Etobicoke, Tp.
Euphemia, Tp.
Euphrasia, Tp.
Evanturel, Tp.
Exeter, V.
Eyre, Tp.

Faraday, Tp.
Fenelon, Tp.
Fenelon Falls, V.
Fergus, V.
Ferris, Tp.
Finch, V.
Finch, Tp.
Fitzroy, Tp.
Flamborough E., Tp.
Flamborough W., Tp.
Flesherton, V.
Flos, Tp.
Foley, Tp.
Forest, Tn.
Fort Erie, V.
Fort Frances, Tn.
Fort William, C.
Frederickburgh N., Tp.
Frederickburgh S., Tp.
Fullarton, Tp.

Gainsborough, Tp.
Galt, Tn.
Galway & Cavendish, Tps.
Gananoque, Tn.
Garafraxa E., Tp.
Garafraxa W., Tp.
Garden Island, V.
Georgetown, V.
Georgina, Tp.
Glamorgan, Tp.
Glanford, Tp.
Glencoe, V.
Glenelg, Tp.
Gloucester, Tp.
Goderich, Tn.
Goderich, Tp.
Gordon, Tp.
Gore Bay, Tn.
Gosfield N., Tp.
Gosfield S., Tp.
Goulburn, Tp.
Gower N., Tp.
Gower S., Tp.
Graham, Tp.
Grand Valley, V.
Grantham, Tp.
Grattan, Tp.
Gravenhurst, Tn.
Greenock, Tp.
Grey, Tp.
Griffith and Matawatchan, Tps.
Grimsby N., Tp.
Grimsby S., Tp.
Guelph, C.
Guelph, Tp.
Guilford, Tp.
Gwillimbury E., Tp.
Gwillimbury N., Tp.
Gwillimbury W., Tp.

Hagar, Tp.
Hagarty & Richards, Tp.
Hagerman, Tp.
Hagersville, V.
Haileybury, Tn.
Haldimand, Tp.
Hallam, Tp.
Hallowell, Tp.
Hamilton, C.
Hamilton, Tp.
Hanmer, Tp.
Hanover, Tn.
Harburn, Tp.
Harcourt, Tp.
Harley, Tp.
Harris, Tp.
Harriston, Tn.
Harrow, Tp.
Harvey, Tp.
Harwich, Tp.
Hastings, V.
Havelock, Tp.
Havelock, V.
Hawkesbury, Tn.
Hawkesbury E., Tp.
Hawkesbury W., Tp.
Hay, Tp.
Head, Maria & Clara, Tps.
Hensall, V.
Hepworth, V.
Hespeler, Tn.
Herschel, Tp.
Hibbert, Tp.
Hilliard, Tp.
Hilliar, Tp.
Hilton, Tp.
Himsworth N., Tp.
Himsworth S., Tp.
Hinchinbrooke, Tp.
Hindon and Anson, Tps.
Holland Landing, V.
Hope, Tp.
Horton, Tp.
Houghton, Tp.
Howard, Tp.
Howe Island, Tp.
Howick, Tp.
Howland, Tp.
Hudson, Tp.
Hullett, Tp.
Humberstone, V.
Humberstone, Tp.
Humphrey, Tp.
Hungerford, Tp.
Huntingdon, Tp.
Huntley, Tp.
Huntsville, Tn.
Huron, Tp.

Ignace, Tp.
Ingersoll, Tn.
Innisfil, Tp.
Iroquois, V.

Jaffray and Melick, Tps.
James, Tp.
Jarvis, V.
Jocelyn, Tp.
Johnston, Tp.
Joly, Tp.

Kaladar, Anglesea & Effingham, Tps.
Kearney, Tn.
Keewatin, Tn.
Kemptville, V.
Kennebec, Tp.
Kenora, Tn.
Keppel, Tp.
Kerns, Tp.
Killaloe Station, V.
Kincardine, Tn.
Kincardine, Tp.
King, Tp.
Kingston, C.
Kingston, Tp.
Kingsville, Tn.
Kinloss, Tp.
Kitley, Tp.
Korah & Parke, Tps.

Laird, Tp.
Lake, Tp.
Lakefield, V.
Lanark, Tp.
Lanark, V.
Lancaster, Tp.
Lancaster, V.
Lansdowne Front, Tp.
Latchford, Tn.
Lavallee, Tp.
Lavant, Tp.
Laxton, Digby and Longford, Tps.

Leamington, Tn.
Leeds & Lansdowne Front, Tps.
Leeds & Lansdowne Rear, Tps.
Limerick, Tp.
Lindsay, Tp.
Listowel, Tn.
Little Current, Tn.
Lobo, Tp.
Lochiel, Tp.
Logan, Tp.
London, C.
London, Tp.
Longford, Tp.
Longueuil, Tp.
L'Orignal, Tp.
Loughborough, Tp.
Lucan, V.
Lucknow, V.
Luther E., Tp.
Luther W., Tp.
Lutterworth, Tp.
Lynedoch, Tp.

McDougall, Tp.
McGillivray, Tp.
McIrvine, Tp.
McKellar, Tp.
McKillop, Tp.
McKim, Tp.
McLean and Ridout, Tps.
McMurrich, Tp.
McNab, Tp.
Macaulay, Tp.
Macdonald, Meredith, etc., Tps.
Machar, Tp.
Machin, Tp.
Madoc, Tp.
Madoc, V.
Maidstone, Tp.
Malahide, Tp.
Malden, Tp.
Manvers, Tp.
Mara, Tp.
March, Tp.
Maria, Tp.
Mariposa, Tp.
Markdale, V.
Markham, Tp.
Markham, V.
Marlborough, Tp.
Marmora and Lake, Tps.
Marmora, V.
Martland, Tp.
Maryborough, Tp.
Marysburgh N., Tp.
Marysburgh S., Tp.
Massey, Tn.
Matawatchan, Tp.
Matchedash, Tp.
Matheson, Tn.
Matilda, Tp.
Mattawa, Tn.
Mattawan, Tp.
Maxville, V.
May, Tp.
Mayo, Tp.
Meaford, Tn.
Medonte, Tp.
Medora & Wood, Tps.
Melancthon, Tp.
Merrickville, V.
Merritton, V.
Mersea, Tp.
Metcalfe, Tp.
Methuen, Tp.
Middleton, Tp.
Midland, Tn.
Millbrook, V.
Miller, Tp.
Milverton, V.
Mimico, V.
Minden, Tp.
Minto, Tp.
Mitchell, Tn.
Monaghan N., Tp.
Monaghan S., Tp.
Monck, Tp.
Monmouth, Tp.
Mono, Tp.
Montague, Tp.
Monteagle and Herschel, Tps.
Moore, Tp.
Morley, Tp.
Mornington, Tp.
Morris, Tp.
Morrisburg, V.
Morrison, Tp.
Mosa, Tp.
Moulton, Tp.
Mount Forest, Tn.
Mountain, Tp.
Mulmur, Tp.
Murray, Tp.
Muskoka, Tp.

Nairn, Tp.
Napanee, Tn.
Nassagaweya, Tp.
Neebing, Tp.
Neelon and Carson, Tps.
Nelson, Tp.
Nepean, Tp.
Nepigon, Tp.
Neustadt, V.
New Hamburg, V.
New Liskeard, Tn.
Newboro, V.
Newburgh, V.
Newbury, V.
Newcastle, V.
Newmarket, Tn.
Niagara, Tn.
Niagara, Tp.
Niagara Falls, C.
Nichol, Tp.
Nightingale, Tp.
Nipissing, Tp.
Nissouri E., Tp.
Nissouri W., Tp.
Normanby, Tp.
North Bay, Tn.
Norwich, V.
Norwich N., Tp.
Norwich S., Tp.
Norwood, V.
Nottawasaga, Tp.

Oakland, Tp.
Oakley, Tp.
Oakville, Tn.
O'Connor, Tp.
Oil Springs, V.
Olden, Tp.
Oliver, Tp.
Omemee, V.
Oneida, Tp.
Onondaga, Tp.
Ops, Tp.
Orangeville, Tn.
Orford, Tp.
Orillia, Tp.
Oro, Tp.
Oshawa, Tn.
Osgoode, Tp.
Osnabruck, Tp.
Oso, Tp.
Osprey, Tp.
Otonabee, Tp.
Ottawa, C.
Owen Sound, Tn.
Oxford on Rideau, Tp.
Oxford E., Tp.
Oxford N., Tp.
Oxford W., Tp.

Paipoonge, Tp.
Paisley, V.
Pakenham, Tp.
Palmerston, Tn.
Palmerston, Canonto, N. and S., Tps.
Papineau, Tp.
Paris, Tn.
Parke, Tp.
Parkhill, Tn.
Parry Sound, Tn.
Peel, Tp.
Pelee, Tp.
Pelham, Tp.
Pembroke, Tp.
Penetanguishene, Tn.
Percy, Tp.
Perry, Tp.
Perth, Tn.
Peterborough, C.
Petewawa, Tp.
Petrolea, Tn.
Pickering, Tp.
Picton, Tn.
Pittsburgh, Tp.
Plantagenet N., Tp.
Plummer, Add., Tp.
Plympton, Tp.
Point Edward, V.
Port Arthur, C.
Port Carling, V.
Port Colborne, V.
Port Dalhousie, V.
Port Dover, V.
Port Elgin, V.
Port Hope, Tn.
Port Perry, V.
Port Rowan, V.
Port Stanley, V.
Portland, Tp.
Portsmouth, V.
Powassan, Tn.
Prescott, Tn.
Preston, Tn.
Prince, Tp.
Proton, Tp.
Puslinch, Tp.

Radcliffe, Tp.
Raglan, Tp.
Rainham, Tp.
Rainy River, Tn.
Raleigh, Tp.
Rama, Tp.
Ramsay, Tp.
Ratter and Dunnett, Tps.
Rawdon, Tp.
Rayside, Tp.
Reach, Tp.
Renfrew Tn.
Richards, Tp.
Ridout, Tp.
Richmond Tp.
Richmond West, V.
Richmond Hill, V.
Ridgetown, Tn.
Rochester, Tp.
Rockland, Tn.
Roddick, Tp.
Rodney, V.
Rolph, Buchanan and Wylie, Tps.
Romney, Tp.
Ross, Tp.
Roxborough, Tp.
Ryde, Tp.
Ryerson, Tp.

St. Catharines, C.
St. Edmunds, Tp.
St. Joseps, Tp.
St. Mary's, Tn.
St. Thomas, C.
St. Vincent, Tp.
Salter, May and Harrow, Tps.
Saltfleet, Tp.
Sandfield, Tp.
Sandwich, Tn.
Sandwich E., Tp.
Sandwich S., Tp.
Sandwich W., Tp.
Sarawak, Tp.
Sarnia, Tn.
Saugeen, Tp.
Sault Ste. Marie, C.
Scarborough, Tp.
Schreiber, Tp.
Scott, Tp.

Scugog, Tp.
Seaforth, Tn.
Sebastopol, Tp.
Seneca, Tp.
Seymour, Tp.
Shallow Lake, V.
Sheffield, Tp.
Shelburne, V.
Sherbourne, etc., Tps.
Sherbrooke, Tp.
Sherbrooke N., Tp.
Sherbrooke S., Tp.
Snerwood, Jones and Burns, Tps.
Shuniah, Tp.
Sidney, Tp.
Simcoe, Tn.
Sioux-Lookout, Tn.
Smith, Tp.
Smith's Falls, Tn.
Snowden, Tp.
Sombra, Tp.
Somerville, Tp.
Sophiasburg, Tp.
Southampton, Tn.
South River, V.
Southwold, Tp.
Springer, Tp.
Springfield, V.
Stafford, Tp.
Stanhope, Tp.
Stanley, Tp.
Stayner, Tn.
Steelton, Tn.
Stephen, Tp.
Stephenson, Tp.
Stirling, V.
Stisted, Tp.
Storrington, Tp.
Stouffville, V.
Stratford, C.
Strathroy, Tn.
Streetsville, V.
Strong, Tp.
Sturgeon Falls, Tn.
Sturgeon Point, V.
Sudbury, Tn.
Sullivan, Tp.
Sundridge, V.
Sunnidale, Tp.
Sutton, V.
Sydenham, Tp.

Tara, V.
Tarbutt and Tarbutt Add., Tps.
Tarentorus, Tp.
Tavistock, V.
Tay, Tp.
Tecumseh, Tp.
Teeswater, V.
Tehkummah, Tp.
Thamesville, V.
Thedford, V.
Thessalon, Tp.
Thessalon, Tn.
Thompson, Tp.
Thorah, Tp.
Thornbury, Tn.
Thorold, Tn.
Thorold, Tp.
Thurlow, Tp.
Tilbury, Tn.
Tilbury E., Tp.
Tilbury N., Tp.
Tilbury W., Tp.
Tillsonburg, Tn.
Tiny, Tp.
Tisdale, Tp.
Tiverton, V.
Torbolton, Tp.
Toronto, C.
Toronto, Tp.
Toronto Gore, Tp.
Tossoronto, Tp.
Tottenham, V.
Townsend, Tp.
Trafalgar, Tp.
Trenton, Tn.
Tuckersmith, Tp.
Tudor and Cashel, Tps.
Turnberry, Tp.
Tweed, V.
Tyendinaga, Tp.

Usborne, Tp.
Uxbridge, Tn.
Uxbridge, Tp.

Van Horne, Tp.
Vankleek Hill, Tn.
Vaughan, Tp.
Verulam, Tp.
Vespra, Tp.
Victoria Harbour, V.
Vienna, Tn.

Wainfleet, Tp.
Walkerton, Tn.
Walkerville, Tn.
Wallace, Tp.
Wallaceburg, Tn.
Walpole, Tp.
Walsingham N., Tp.
Walsingham S., Tp.
Wardsville, V.
Warwick, Tp.
Waterdown, V.
Waterford, V.
Waterloo, Tp.
Waterloo, Tn.
Waters, Tp.
Watford, V.
Watt, Tp.
Wawanosh E., Tp.
Wawanosh W., Tp.
Webbwood, Tn.
Welland, Tn.
Wellesley, Tp.
Wellington, V.
West Lorne, V.
Westminster, Tp.
Weston, V.
Westport, V.
Whitby, Tn.
Whitby E., Tp.
Whitby, Tp.
Whitchurch, Tp.
Whitney, Tp.
Wiarton, Tn.
Widdifield, Tp.
Wilberforce & Algona N., Tps.
Williams E., Tp.
Williams W., Tp.
Williamsburg, Tp.
Willoughby, Tp.
Wilmot, Tp.
Winchester, Tp.
Winchester, V.
Windham, Tp.
Windsor, C.
Wingham, Tn.
Wolfe Island, Tp.
Wolford, Tp.
Wollaston, Tp.
Wood, Tp.
Woodbridge, V.
Woodhouse, Tp.
Woodstock, C.
Woodville, V.
Woolwich, Tp.
Worthington & Blue, Tps.
Wroxeter, V.
Wylie, Tp.
Wyoming, V.

Yarmouth, Tp.
Yonge, Front, Tp.
Yonge and Escott, Rear, Tps.
York, Tp.

Zone, Tp.
Zorra E., Tp.
Zorra, W., Tp.

REPORTS FROM MUNICIPAL CLERKS

ABERDEEN, Tp.—See Macaulay, Meredith, and Aberdeen Tps.

ABINGER, Tp.—See Denbigh, Abinger, and Ashby Tps.

ACTON, V.—Owns and operates hydro-electric light plant, cost $10,000. Good openings for shoe factory, creamery, cheese factory. Number of buildings erected, 5; cost $4,500. A. Runney, Village Clerk, Acton.

ADELAIDE, Tp.—Number of buildings erected, 10; cost $6,200. Amount expended on permanent improvements, $2,500. Amount expended on sanitation, $90. H. J. Miller, Township Clerk, Adelaide.

AILSA CRAIG, V.—Opening for brick and tile factory. Number of buildings erected, 1; cost $1,500. Amount expended on permanent improvements, $674. Amount expended on sanitation, $120. E. B. Smith, Village Clerk, Ailsa Craig.

ADMASTON, Tp.—Number of buildings erected, 7; cost $1,205. Amount expended on permanent improvements, $850. R. W. Brown, Township Clerk, Admaston Station.

ADOLPHUSTOWN, Tp.—Evaporator started. Good opening for canning factory. Amount expended on permanent improvements, $710. D. W. Roblin, Township Clerk, Parma.

ALBEMARLE, Tp.—Sawmill started. Owns and operates waterworks, cost $1,000. Opening for a sash and door factory. Number of buildings erected, 7; cost, $5.050. Amount expended on permanent improvements, $2,292. Thos. Coveney, Township Clerk, Purple Valley P.O.

ALBERTON, Tp.—Sawmill started. Splendid opening for stave and heading and shingle mill. Number of buildings erected, 4; cost, $4,000. Amount expended on permanent improvements, $2,185. F. H. Warner, Township Clerk, Crozier.

ALBION, Tp.—Number of buildings erected, 5; cost $7,500. Amount expended on permanent improvements, $6,000. Robert Matson, Township Clerk, Palgrave.

ALEXANDRIA, Tp.—Owns and operates waterworks, cost $35,750; electric light plant, cost $11,750. Openings for furniture factory and boot and shoe factory. Number of buildings erected, 8; cost $15,000. Amount expended on permanent improvements, $4,300. S. Macdonald, Town Clerk, Alexandria.

ALFRED, Tp.—Number of buildings erected, 25; cost $15,000. Amount expended on permanent improvements, $1,200. B. G. Parisien, Township Clerk, Alfred.

ALGONA N., Tp.—See Wilberforce and Algona N., Tps.

ALGONA S., Tp.—Amount expended on permanent improvements, $28. John P. Nelan, Township Clerk, Castile.

ALICE AND FRASER, Tps.—Good opening for cheese factory. Number of buildings erected, 20; cost $6,000. Amount expended on permanent improvements, $780. J. M. Kennedy, Township Clerk, Pembroke.

ALLISTON, Tn.—Silverware factory started. Owns and operates waterworks, value, $27,000. Good opening for woodenware factory. Number of buildings erected, 6; cost $10,000. Amount expended on permanent improvements, $250. Amount expended on sanitation, $1,500. W. M. Lockhart, Town Clerk, Alliston.

ALMONTE, Tn.—Owns and operates electric light plant, cost $40,000. Good opening for any industry requiring power. Amount expended on permanent improvements, $2.500. J. T. Kirkland, Town Clerk, Almonte.

ALNWICK, Tp.—Number of buildings erected, 17; cost $5,250. Amount expended on permanent improvements, $1,300. Amount expended on sanitation, $1,900. John McMillan, Township Clerk, Roseneath.

ALVINSTON, V.—Opening for sugar beet factory, etc. One new building erected, cost $2,300. J. Irving, Village Clerk, Alvinston.

AMABEL, Tp.—Number of buildings erected, 10; cost $5,000. Amount expended on permanent improvements, $4,279. R. H. Murray, Township Clerk, Allenford.

AMARANTH, Tp.—Number of buildings erected 4; cost $6,000. Amount expended on permanent improvements, $6,700. E. Hamilton, Township Clerk, Laurel.

AMELIASBURG, Tp.—Two canning factories started. Number of buildings erected, 4; cost $8,000. Amount expended on permanent improvements, $1,182. Amount expended on sanitation, $29. F. C. File, Township Clerk, Ameliasburg.

AMHERST ISLAND, Tp.—Number of buildings erected, 1; cost $2,000. Amount expended on permanent improvements, $600. Wm. H. Moutray, Township Clerk, Stella.

AMHERSTBURG, Tn.—Knitting factory and automobile factory started. Owns and operates waterworks, value $60,000; street lighting, value $4,500. Openings for glass factory, salt industry, tobacco factory, sash and door factory, tile and brick yard. Number of buildings erected, 5; cost $7,000. Amount expended on sanitation, $120. Gordon E. Puford, Town Clerk, Amherstburg.

ANCASTER, Tp.—Good opening for evaporator or canning factory. Number of buildings erected, 40; cost $35,000. Amount expended on permanent improvements, $2,880. Amount expended on sanitation, $45. Henry Pim, Township Clerk, Ancaster.

ANDERDON, Tp.—Canning factory started. Good opening for factories of any description. Number of buildings erected, 4; cost $2,400. Amount expended on permanent improvements, $3,091. A. C. Mailloux, Township Clerk, Gordon.

ANGLESEA, Tp.—See Kaladar, Anglesea, and Effingham Tps.

ANSON AND HINDON, Tps.—Openings for lumber mills, furniture factory, etc. No new buildings erected. Wm. A. Welsh, Township Clerk, Minden.

ANSTRUTHER, Tp.—See Burleigh and Anstruther, Tps.

APPLEBY, Tp.—See Casimer, Jennings and Appleby Tps.

ARKONA, V.—Good opening for canning factory and jam factory. One new building erected; cost $6,000. Amount expended on permanent improvements, $250. J. G. Brown, Village Clerk, Arkona.

ARMOUR, Tp.—Number of buildings erected, 5; cost $5,000. Amount expended on permanent improvements, $1,250. Fred. Metcalfe, Township Clerk, Burk's Falls.

ARNPRIOR, Tn.—Mica factory started. Owns and operates waterworks, cost $90,460. Good opening for box factory, knitting factory, grist mill, iron foundry, machine shop, pulp mill, planing mills. Number of buildings erected, 7; cost $31,100. Amount expended on permanent improvements, $3,363. Amount expended on sanitation, $430. T. H. Grout, Town Clerk, Arnprior.

ARRAN, Tp.—Number of buildings erected, 4; cost $4,000. Amount expended on permanent improvements, $7,638. Amount expended on sanitation, $87. H. T. Potts, Township Clerk, Tara.

ARTEMESIA, Tp.—Good opening for saw mill, brick yard, cheese factory. Number of buildings erected, 5; cost $10,000. Amount expended on permanent improvements, $3,700. Amount expended on sanitation, $109. W. J. Bellamy, Township Clerk, Flesherton.

ARTHUR, Tp.—Good opening for creamery. Number of buildings erected, 6; cost $6,000. Amount expended on permanent improvements, $4,000. Albert Hellyer, Township Clerk, Kenilworth.

ARTHUR, V.—Good openings for various industries. Number of buildings erected, 2; cost $4,000. Amount expended on permanent improvements, $1,500. Amount expended on sanitation, $50. D. T. Small, Village Clerk, Arthur.

ASHBY, Tp.—See Denbigh, Abinger, and Ashby, Tps.

ASHFIELD, Tp.—Amount expended on permanent improvements, $4,345. Amount expended on sanitation, $25. T. G. Allen, Township Clerk, Dungannon.

ASPHODEL, Tp.—Amount expended on permanent improvements, $2,000. John Brackenridge, Township Clerk, Westwood.

ASSIGINACK, Tp.—Openings for saw mills, sash and door factory, pulp mills. Number of buildings erected, 8; cost $11,000. Amount expended on permanent

improvements, $2,683. Amount expended on sanitation, $68. R. W. Neilson, Township Clerk, Manitowaning.

Athens, V.—No new buildings erected. Amount expended on permanent improvements, $700. G. F. Donnelly, Village Clerk, Athens.

Athol, Tp.—Canning factory started. Good opening for manufacture of cheese boxes and apple barrels. Number of buildings erected, 5; cost $5,200. Amount expended on permanent improvements, $217. W. Moore, Township Clerk, Athol.

Atwood, Tp.—Number of buildings erected, 5; cost $600. Amount expended on permanent improvements, $714. W. H. Williscroft, Township Clerk, Rainy River.

Augusta, Tp.—Number of buildings erected, 20; cost $10,000. Amount expended on permanent improvements, $5,000. Amount expended on sanitation, $600. John Mellafont, Township Clerk, Algonquin.

Aurora, Tn.—Fudniture factory and leather factory started. Owns and operates waterworks, cost $10,000; electric light system, cost $25,000. Good openings for industries of any character. Number of buildings erected, 60; cost $120,000. Amount expended on permanent improvements, $8,000. Amount expended on sanitation, $3,000. S. H. Lundy, Town Clerk, Aurora.

Awenge, Tp.—See Korah and Parke Tps.

Aylmer, Tn.—Owns and operates waterworks system, cost $100,000; electric light plant, cost $35,000. Splendid opening for brick factory. Number of buildings erected, 7; cost $128,000. Amount expended on permanent improvements, $12,000. D. C. Davis, Town Clerk, Aylmer.

Ayr, V.—Owns and operates electric light plant, cost $5,550. Good openings for various industries. One new building erected, cost $2,500. Amount expended on permanent improvements, $1,601. A. J. Reid, Village Clerk, Ayr.

Bagot and Blythfield, Tps.—Saw mill started. Openings for pulp factory, smelter, and flour mill. Number of buildings erected, 3; cost $2,500. Amount expended on permanent improvements, $300. Amount expended on sanitation, $25. J. J. Dillon, Township Clerk, Calabogie.

Balfour, Tp.—Good openings for flour and woollen mills. No new buildings erected. Amount expended on permanent improvements, $180. J. A. Bastien, Township Clerk, Chelmsford.

Bancroft, V.—Good openings for sash and door factory, planing mill, etc. Number of buildings erected, 3; cost $4,000. Amount expended on permanent improvements, $5,500. J. A. Eby, Village Clerk, Bancroft.

Barrie, Tn.—Two shoe factories, clothing factory, and Excelsior factory started. Owns and operates waterworks, cost $124,854; electric light plant, cost $90,452. Openings for tannery, woollen mills, knitting factory, corset factory, furniture factory, canning factory, white wear factory, woodenware factory, cheese factory, meat packing industry. Number of buildings erected, 22; cost $53,450; 41 permits for repairs, cost $40,787. Amount expended on permanent improvements, $3,098. Amount expended on sanitation, $1,039. E. Donnell, Town Clerk, Barrie.

Barrie, Tp.—No new buildings erected. Amount expended on permanent improvements, $50. W. P. Maynard, Township Clerk, Cloyne.

Barton, Tp.—Steel car factory and porcelain factory started. Good openings for almost any industries. Number of buildings erected, 50; cost $50,000. Amount expended on permanent improvements, $26,114. Amount expended on sanitation, $733. A. G. E. Bryant, Township Clerk, Mount Hamilton.

Bastard and Burgess, S., Tps.—No new buildings erected. Amount expended on permanent improvements, $2,181. Amount expended on sanitation, $182. W. J. Brick, Township Clerk, Delta.

Bath, V.—General store started. Owns and operates lighting system, cost $300. Good opening for canning factory. No new buildings erected. Amount expended on permanent improvements, $555. Amount expended on sanitation, $2.25. E. P. Shephard, Village Clerk, Bath.

Bathurst, Tp.—Number of buildings erected, 12; cost $10,000. Amount expended on permanent improvements, $681. Amount expended on sanitation, $169. R. M. Anderson, Township Clerk, Perth.

Bayfield, V.—Chopping mill started. Owns and operates rural telephone system; cost, $1,385. Good openings for flax mill and canning factory. No new buildings erected. Amount expended on permanent improvements, $436. H. W. Erwin, Village Clerk, Bayfield.

Bayham, Tp.—Good opening for canning factory, machine shop. Number of buildings erected, 6; cost $10,500. Amount expended on permanent improvements, $2,000. B. Brian, Township Clerk, Staffordshire.

Beamsville, V.—Owns and operates waterworks system, cost $27,000. Good openings for canning factory, basket factory, jam factory, etc. Number of buildings erected, 13; cost $10,000. S. B. Bisbee, Village Clerk, Beamsville.

Beaverton, V.—Good opening for canning and furniture factories. One new building erected cost $7,500. Amount expended on permanent improvements, $756. C. A. Paterson, Village Clerk, Beaverton.

Beckwith, Tp.—Number of buildings erected, 2; cost $3,000. Amount expended on permanent improvements, $1,000. J. W. Robertson, Township Clerk, Carleton Place.

Bedford, Tp.—Mining and lead crushing started. Number of buildings erected, 5; cost $4,000. Amount expended on permanent improvements, $1,200. James McNeil, Township Clerk, Burridge.

Beeton, V.—Owns and operates waterworks, value $20,000; electric light plant, value $4,000. Good openings for any kind of industries. Number of buildings erected, 2; cost $1,000. Amount expended on permanent improvements, $500. Joseph Wright, Village Clerk, Beeton.

Belle River, V.—Cement block factory and oil refinery started. Number of buildings erected, 4; cost $2,100. Amount expended on permanent improvements, $2,768. Alfred La Charite, Village Clerk, Belle River.

Belleville, C.—Owns and operates gas works, cost $100,000; waterworks, cost $200,000. Openings for all kinds of industries. Number of buildings erected, 70; cost, $300,000. Amount expended on permanent improvements, $2,000. Amount expended on sanitation, $8,000. W. C. Mikel, City Clerk, Belleville.

Belmont and Methuen, Tps.—Rock crushing industry started. Number of buildings erected, 7; cost $7,000. Amount expended on permanent improvements, $2,089. W. H. Johnston, Township Clerk, Havelock.

Bentinck, Tp.—Number of buildings erected, 11; cost $17,500. Amount expended on permanent improvements, $2,450. Amount expended on sanitation, $487. J. H. Chittick, Township Clerk, Lamlash.

Berlin, C.—Tile factory, wood fibre factory, pyrofugent flooring factory, shoe factory, chatelaine and purse factory, and trunk and bag factory started. Owns and operates gas and electric light plant, cost $479,317; waterworks, cost $318,759; street railway, cost $138,374. Openings for all kinds and more especially iron industries. Number of buildings erected, 252; cost $831,213. Amount expended

on permanent improvements, $47,553. Amount expended on sanitation, $25,376. A. H. Millar, City Clerk, Berlin.

Bertie, Tp.—Brick yard started. Number of buildings erected, 65; cost $60,000. Amount expended on permanent improvements, $4,471. Amount expended on sanitation, $198. M. S. Pound, Township Clerk, Ridgeway.

Beverly, Tp.—Number of buildings erected, 8; cost $3,600. Amount expended on permanent improvements, $2,921. Wm. Wood, Township Clerk, Rockton.

Bexley, Tp.—Good openings for lime kilns. One new building erected, cost $300. Amount expended on permanent improvements, $2,050. Alfred Taylor, Township Clerk, Victoria Road.

Biddulph, Tp.—Good openings for drainage, tile and cement works, agricultural implement factory, etc. Number of buildings erected, 12; cost $15,000. Amount expended on permanent improvements, $6,594. Amount expended on sanitation, $18. W. D. Stanley, Township Clerk, Granton.

Billings, Tp.—Good opening for woodworking industry. Number of buildings erected, 4; cost $3,200. Amount expended on permanent improvements, $1,675. W. M. Boyd, Township Clerk, Kakawong.

Binbrook, Tp.—Number of buildings erected, 4; cost $7,000. Amount expended on permanent improvements, $2,535. W. B. Switzer, Township Clerk, Binbrook.

Blandford, Tp.—Number of buildings erected, 6; cost $1,000. Amount expended on permanent improvements, $1,872. Amount expended on sanitation, $80. W. G. Henderson, Township Clerk, Bright.

Blanchard, Tp.—Number of buildings erected, 7; cost $14,000. Amount expended on permanent improvements, $4,000. John H. Jameson, Township Clerk, Rannoch.

Blenheim, Tn.—Canning factory started. Owns and operates electric light plant, cost $13,000. Number of buildings erected, 3; cost $10,000. P. S. Shillington, Town Clerk, Blenheim.

Blenheim, Tp.—Number of buildings erected, 5; cost $7,000. Amount expended on permanent improvements, $7,190. Hugh Allan, Township Clerk, Drumbo.

Blezard, Tp.—Good opening for creamery and carding mill. Number of buildings erected, 4; cost $4,800. Amount expended on permanent improvements, $165. G. Bonin, Township Clerk, Blezard Valley.

Blind River, Tn.—Box factory started. Good openings for hard wood industry, chemical works, tannery, lumber mill, tie mill, and pulp mill. One new building erected, cost $10,000. Amount expended on permanent improvements, $500. Amount expended on sanitation, $720. M. F. Dyke, Town Clerk, Blind River.

Bloomfield, V.—Canning factory started. Good opening for broom factory or any industry requiring steam power. One new building erected, cost $25,000. Amount expended on permanent improvements, $2,000. C. H. Saylor, Village Clerk, Bloomfield.

Blue, Tp.—See Worthington and Blue, Tps.

Blyth, V.—Flax mill and saw mill started. Owns and operates electric light plant and waterworks for fire protection, value $12,500. Openings for furniture factory, salt manufacture, stove and iron foundry, knitting factory, and canning factory. Number of buildings erected, 2; cost $7,000. Amount expended on permanent improvements, $300. A. Elder, Village Clerk, Blyth.

BLYTHFIELD, Tp.—See Bagot and Blythfield, Tps.

BOBCAYGEON, V.—Owns and operates electric light plant, cost $25,000. Good openings for woodenware factory, barrel factory, furniture factory, whitewear factory, tannery, lime kiln, and stone quarry. Number of buildings erected, 6; cost $7,800. Amount expended on permanent improvements, $579. C. E. Stewart, Village Clerk, Bobcaygeon.

BOLTON, V.—Good opening for steam laundry. Number of buildings erected, 11; cost $22,000. Amount expended on permanent improvements, $500. John McDonald, Village Clerk, Bolton.

BONFIELD, Tn.—Openings for woollen factory, flour mill, woodworking and furniture factory. No new buildings erected. Amount expended on permanent improvements, $323. L. A. St. Cyr, Town Clerk, Bonfield.

BONFIELD, Tp.—Good openings for sash and door factories, grist mill, carding and woollen mill, brick yard and carbide factory. Number of buildings erected, 16; cost $12,000. Amount expended on permanent improvements, $600. Amount expended on sanitation, $12. M. R. Dunn, Township Clerk, Rutherglen.

BOSANQUET, Tp.—Number of buildings erected, 6; cost $6,800. Amount expended on permanent improvements, $6,118. Geo. Sutherland, Township Clerk, Thedford.

BOTHWELL, Tn.—Owns and operates electric light plant and waterworks for fire protection, cost $10,500. Good opening for canning factory. No new buildings erected. W. H. Bradley, Town Clerk, Bothwell.

BOWMANVILLE, Tn.—Canning factory, tire and rubber factory started. Good opening for brass works, shoe factory, planing mill, machine shop. Number of buildings erected, 58; cost $141,000. Amount expended on permanent improvements, $3,200. Amount expended on sanitation, $1,500. John Lyle, Town Clerk, Bowmanville.

BRACEBRIDGE, Tn.—Poultry farm started. Owns and operates electric light, power and waterworks plant, cost $180,000. Openings for chemical plant, woodworking industry and upper leather tannery. Number of buildings erected, 8; cost $18,500. Amount expended on permanent improvements, $2,168. Amount expended on sanitation, $428. A. C. Salmon, Town Clerk, Bracebridge.

BRADFORD, V.—Number of buildings erected, 2; cost $3,000. Amount expended on permanent improvements, $600. Robt. Stewart, Town Clerk, Bradford.

BRAMPTON, Tn.—Foundry started. Owns and operates waterworks system, cost $150,000; electric light plant, $75,000. Good openings for various industries. Number of buildings erected, 41; cost $175,000. Amount expended on permanent improvements, $47,000. Amount expended on sanitation, $9,000. W. H. McFadden, Town Clerk, Brampton.

BRANT, Tp.—Number of buildings erected, 12; cost $12,000. Amount expended on permanent improvements, $5,000. Amount expended on sanitation, $100. M. A. McCallum, Township Clerk, Elmwood.

BRANTFORD, C.—Automobile factory started. Owns and operates waterworks, cost $565,420. Good opening for various industries. Number of buildings erected, 666; cost $1,167,105. Amount expended on permanent improvements, $63,456. Amount expended on sanitation, $65,853. H. F. Leonard, City Clerk, Brantford.

BRANTFORD, Tp.—Good opening for industries requiring electric power. Number of buildings erected, 75; cost $92,000. Amount expended on permanent improvements, $10,835. J. A. Smith, Township Clerk, Brantford Post Office.

BRIDGEBURG, V.—Casket factory and marble works started. Owns and operates

waterworks, cost $40,000. Number of buildings erected, 40; cost $33,400. Amount expended on permanent improvements, $3,547. Amount expended on sanitation, $32,000. R. A. Land, Village Clerk, Bridgeburg.

Brighton, Tp.—Number of buildings erected, 10; cost $7,000. Amount expended on permanent improvements, $3,129. Amount expended on sanitation, $25. F. A. Wade, Township Clerk, Brighton.

Brighton, V.—Good openings for various industries. Number of buildings erected, 3; cost $6,000. Amount expended in permanent improvements, $2,800. A. Marks, Village Clerk, Brighton.

Brock, Tp.—Number of buildings erected, 6; cost $6,000. Amount expended on permanent improvements, $6,500. Amount expended on sanitation, $200. F. Doble, Township Clerk, Sunderland.

Brockville, Tn.—Owns and operates waterworks, cost $265,587; gas and electric plant, cost $235,364. Good openings for various industries. Number of buildings erected, 38; cost, $80,265. Amount expended on permanent improvements, $57,882. Amount expended on sanitation, $5,850. G. K. Dewey, Town Clerk, Brockville.

Bromley, Tp.—Good openings for almost any kind of industries. Number of buildings erected, 3; cost $5,000. Amount expended on permanent improvements, $800. J. D. Walsh, Township Clerk, Osceola.

Brooke, Tp.—Owns and operates telephone line, cost $18,000. Good opening for brick and tile yard and cheese factory. Number of buildings erected, 11; cost $15,000. Amount expended on permanent improvements, $7,672. Amount expended on sanitation, $33. W. G. Willoughby, Township Clerk, Watford.

Brougham, Tp.—No new buildings erected. Amount expended on permanent improvements, $350. Michael Sheedy, Township Clerk, Mount St. Patrick.

Bruce, Tp.—Municipal telephone system under construction. Good opening for summer resorts on Lake Huron. Amount expended on permanent improvements, $3,545. J. G. MacKay, Township Clerk, Underwood.

Bruce Mines, Tn.—Trap stone crushing industry started. Good opening for hardwood factory. No new buildings erected. Amount expended on permanent improvements, $700. Thos. Sullivan, Town Clerk, Bruce Mines.

Brudell and Lynedock, Tps.—Number of buildings erected, 3; cost $400. J. N. George, Township Clerk, Brudenell.

Brunel, Tp.—Good opening for saw mills and wood factories. Number of buildings erected, 3; cost $2,000. Amount expended on permanent improvements, $500. Henry Farnsworth, Township Clerk, Huntsville.

Bruton, Tp.—See Dysart, etc., Tps.

Brussels, V.—Good opening for tannery, machine shop, condensed milk factory, etc. No new buildings erected. Owns and operates telephone system, cost $45,000. Amount expended on permanent improvements, $763. Amount expended on sanitation, $20. F. S. Scott, Village Clerk, Brussels.

Buchanan, Tp.—See Rolph, Buchanan and Wylie Tps.

Bucke, Tp.—Openings for industries of any character. Number of buildings erected, 10; cost $5,000. Amount expended on permanent improvements. $625. H. A. Day, Township Clerk, Haileybury.

Burford, Tp.—Amount expended on permanent improvements, $7,000. F. W. Taylor, Township Clerk, Cathcart.

Burgess N., Tp.—One new building erected, cost $1,500. Amount expended on permanent improvements, $275. R. T. Noonan, Township Clerk, Stanleyville.

Burgess S., Tp.—See Bastard and Burgess S., Tps.

Burk's Falls, V.—Owns and operates waterworks, cost $37,000. Good opening for factories of any kind. Number of buildings erected, 5; cost $6,800. Amount expended on permanent improvements, $16,552. Amount expended on sanitation, $5. C. McArthur, Village Clerk, Burk's Falls.

Burleigh and Anstruther, Tps.—Good opening for a doctor. Number of buildings erected, 2; cost $1,000. Amount expended on permanent improvements, $185. W. Gallon, Township Clerk, Apsley.

Burlington, V.—Owns and operates waterworks, cost $60,000. Good openings for industries of any character. Number of buildings erected, 22; cost $85,000. Amount expended on permanent improvements, $6,000. J. S. Allen, Village Clerk, Burlington.

Burpee, Tp.—No new buildings erected. Amount expended on permanent improvements, $400. Norman Bailey, Township Clerk, Evansville.

Cache Bay, Tn.—Good opening for sash and door factory. No new buildings erected. Amount expended on permanent improvements, $1,195. Amount expended on sanitation, $13. Fred. Schroeder, Town Clerk, Cache Bay.

Caistor, Tp.—Number of buildings erected, 5; cost $6,000. Amount expended on permanent improvements, $3,000. A. Shields, Township Clerk, Caistorville.

Caldwell, Tp.—Number of buildings erected, 6; cost $3,000. Amount expended on permanent improvements, $3,176. Ed. Beaudoin, Township Clerk, Verner.

Caledon, Tp.—Good opening for factories of any description. Number of buildings erected, 2; cost, $2,700. Amount expended on permanent improvements, $6,748. L. H. Willis, Township Clerk, Belfontain.

Caledonia, Tp.—Number of buildings erected, 10; cost $5,000. R. L. Downing, Township Clerk, Routhier.

Caledonia, V.—Owns and operates electric lighting and power, cost $5,000. Good opening for various industries. Number of buildings erected, 15; cost $40,000. Amount expended on permanent improvements, $2,000. Amount expended on sanitation, $200. F. W. Young, Village Clerk, Caledonia.

Calvin, Tp.—Amount expended on permanent improvements, $66. Amount expended on sanitation, $8. D. Adams, Township Clerk, Galston.

Camden, Tp.—Good opening for tile yard. Number of buildings erected, 3; cost $8,000. Amount expended on permanent improvements, $3,000. M. S. Blackburn, Township Clerk, Dresden.

Camden E., Tp.—Number of buildings erected, 6; cost $10,000. Amount expended on permanent improvements, $55,000. T. E. McGill, Township Clerk, Centreville.

Cameron, Tp.—Good openings for saw mills and pulp mills. Amount expended on permanent improvements, $600. S. J. McMeekin, Township Clerk, Mattawa.

Canborough, Tp.—Amount expended on permanent improvements, $4,000. M. E. Shaver, Township Clerk, Canbobo, P. O.

Cannington, V.—Openings for industries of any character. One new building erected, cost $3,000. W. Robinson, Village Clerk, Cannington.

Canonto N., Tp.—See Palmerston and N. and S. Canonto Tps.

Canonto S., Tp.—See Palmerston and N. and S. Canonto Tps.

Caradoc, Tp.—Owns and operates telephone system, cost $16,000. Number of buildings erected, 10; cost $10,000. Amount expended on permanent improvements, $4,000. Amount expended on sanitation, $24.40. F. A. Lockwood, Township Clerk, Mount Brydges.

Carden, Tp.—Number of buildings erected, 3; cost $2,000. Amount expended on permanent improvements, $312. John Walsh, Township Clerk, Kirkfield.

Cardiff, Tp.—Graphite mine started. Good opening for saw mill. Number of buildings erected, 1; cost $12,000. Amount expended on permanent improvements, $80. A. G. Tate, Township Clerk, Highland Grove.

Cardinal, V.—Openings for industries of any character. One new building erected, cost $1,000. Amount expended on permanent improvements, $800. M. Kavanagh, Village Clerk, Cardinal.

Cardwell, Tp.—Good opening for saw mill. Number of buildings erected, 3; cost $1,500. Amount expended on permanent improvements, $246. M. Wilson, Township Clerk, Rosseau.

Carleton Place, Tn.—Foundry and machine shop started. Good openings for industries of any character. Number of buildings erected, 6; cost $24,200, Amount expended on sanitation, $40,000. A. R. G. Pedan, Town Clerk, Carleton Place.

Carling, Tp.—Canadian explosives factory started. Good opening for tannery and woodworking industry. No new buildings erected. Amount expended on permanent improvements, $200. J. D. Broughton, Township Clerk, Parry Sound.

Carlow, Tp.—Openings for industries of any character. Number of buildings erected, 2; cost $2,000. Amount expended on permanent improvements, $1,200. Amount expended on sanitation, $16. J. E. Greaves, Township Clerk, Fort Stewart.

Carnarvon, Tp.—Amount expended on permanent improvements, $1,700. William Vincer, Township Clerk, Mindemoya.

Carrick, Tp.—Good opening for shoe factory, chair and furniture factory. Number of buildings erected, 19; cost $15,000. Amount expended on permanent improvements, $2,000. Amount expended on sanitation, $100. J. A. Johnston, Township Clerk, Mildmay.

Cartwright, Tp.—Number of buildings erected, 9; cost $73,000. Amount expended on permanent improvements. $796. Amount expended on sanitation. $31. W. Beacock. Township Clerk, Caesarea.

Casey, Tp.—Good opening for cheese and butter factory. Number of buildings erected, 5; cost $3,000. Amount expended on permanent improvements, $4,000. J. Sheedy, Township Clerk, Pearson.

Casselman, V.—Owns and operates fire engine, cost $5,000. Number of buildings erected, 2; cost $3,000. Amount expended on permanent improvements, $688. Amount expended on sanitation. $155. Joseph Martin, Village Clerk, Casselman.

Cassimer, Jennings and Appelby. Tps.—Good opening for planing mill, sash and door factory. Number of buildings erected. 7: cost $3,500. Amount expended on permanent improvements, $1.500. Joseph Levert, Township Clerk, St. Charles.

Cavan, Tp.—Saw mill started. Opening for cheese factory. Number of

buildings erected, 8; cost $3,700. Amount expended on permanent improvements, $6,137. J. J. Fair, Township Clerk, Millbrook.

CAVENDISH, Tp.—See Galway and Cavendish Tps.

CAYUGA, V.—Rubber goods factory started. Good opening for canning and pickle factory. Number of buildings erected, 8; cost $30,000. Amount expended on permanent improvements, $1,000. J. W. Sheppard, Village Clerk, Cayuga.

CAYUGA N., Tp.—Number of buildings erected, 10; cost $18,000. Amount expended on permanent improvements, $4,000. W. Teasdale, Township Clerk, Cayuga.

CAYUGA S., Tp.—One new building erected, cost $1,000. Amount expended on permanent improvements, $300. J. W. Cauhheli, Township Clerk, South Cayuga.

CHAFFEY, Tp.—Number of buildings erected, 6; cost $2,900. Amount expended on permanent improvements, $1,561. A. J. Down, Township Clerk, Huntsville.

CHAMBERLAIN, Tp.—Number of buildings erected, 3; cost $600. George Dickinson, Township Clerk, Englehart.

SHANDOS, Tp.—Owns and operates telephone system, cost $3,000. Good opening for mining industry and woodworking factories. Number of buildings erected, 5; cost $970. Amount expended on permanent improvements, $181. Amount expended on sanitation, $78.25. L. P. Bullied, Township Clerk, Lasswade.

CHAPLEAU, Tp.—Owns and operates waterworks, cost $41,255. Good opening for pulp mill. Number of buildings erected, 10; cost $20,000. Amount expended on permanent improvements, $2,525. T. J. Godfrey, Township Clerk, Chapleau.

CHAPMAN, Tp.—Good openings for woollen mills, etc. Number of buildings erected, 3; cost $5,000. Amount expended on permanent improvements, $2,032. Amount expended on sanitation, $33. H. Q. Snuggs, Township Clerk, Magnetawan.

CHAPPLE, Tp.—Good openings for flour mill, stave mill, and box factory. Number of buildings erected, 5; cost $4,500. Amount expended on permanent improvements, $44,010. Amount expended on sanitation, $126. E. Kernahan, Township Clerk, Barwick.

CHARLOTTENBURG, Tp.—Good opening for tile factory. Number of buildings erected, 12; cost $25,000. Amount expended on permanent improvements, $4,000. Amount expended on sanitation, $1,601. G. A. Watson, Township Clerk, Williamstown.

CHARLOTTEVILLE, Tp.—Canning factory and evaporator started. Good opening for green houses, tile and brick factory, flour mill. Number of buildings erected, ; cost $10,000. Amount expended on permanent improvements, $1,500. Amount expended on sanitation, $25. R. W. McCall, Township Clerk, Vittoria.

CHATHAM, C.—Bridge works, malleable iron works, tile and cement works, foundry started. Owns and operates waterworks, cost $200,000: street lighting plant, cost $18,000. Good opening for any class of industry, with sites donated. Number of buildings erected, 166; cost $201,591. Amount expended on permanent improvements, $35,000. Amount expended on sanitation, $3,000. W. D. Merritt, City Clerk, Chatham.

CHATHAM, Tp.—Good opening for tile and brick yard. Number of build-

ings erected, 15; cost $15,000. Amount expended on permanent improvements, $1,500. A McArthur, Township Clerk, Tupperville.

CHATSWORTH, V.—No new buildings erected. Amount expended on permanent improvements, $102. Amount expended on sanitation, $6. W. G. Reilly, Village Clerk, Chatsworth.

CHELMSFORD, Tn.—Openings for industries of any character. Number of buildings erected, 4; cost $2,500. Amount expended on permanent improvements, $1,500. Amount expended on sanitation, $100. H. J. Gratton, Town Clerk, Chelmsford.

CHESLEY, Tn.—Owns and operates waterworks, cost $42,000. Good opening for foundry, whitewear factory, etc. One new building erected, cost $20,000. amount expended on permanent improvements, $1,000. Amount expended on sanitation, $600. H. S. Sanderson, Town Clerk, Chesley.

CHESTERVILLE, V.—Good opening for sash and door factory. Number of buildings erected, 3; cost $8,500. Amount expended on permanent improvements, $238. Amount expended on sanitation, $45. G. Elliott, Village Clerk, Chesterville.

CHINQUACOUSY, Tp.—Owns and operates telephone system, cost $30,000. Number of buildings erected, 2; cost $3,000. Amount expended on permanent improvements, $12,000. Robert Kee, Township Clerk, Cheltenham.

CHISHOLM, Tp.—Good openings for brick making, cement brick or block making planing mill, cheese factory and creamery. Number of buildings erected, 2; cost $1,800. Amount expended on permanent improvements, $1,170. E. Topps, Township Clerk, Alderdale.

CHIPPAWA, V.—Owns and operates street lighting plant, cost $1,200. Good openings for industries of any character. Number of buildings erected, 3; cost $5,000. Amount expended on permanent improvements, $1,200. Chas. Weinbrenner, Village Clerk, Chippawa.

CHRISTIE, Tp.—Wood turning factory and saw mill started. Good opening for furniture factory, spool, bobbin and button factory. Number of buildings erected, 3; cost $500. Amount expended on permanent improvements, $900. Amount expended on sanitation, $25. W. Thompson, Township Clerk, Orrville.

CLARA, Tp.—See Head, Maria and Clara Tps.

CLARENCE, Tp.—Openings for industries of any character. Number of buildings erected, 250; cost $350,000. Amount expended on permanent improvements, $12,000. Amount expended on sanitation, $1,025. J. A. Menard, Township Clerk, Bourget.

CLARENDON AND MILLER, Tps.—Saw mill started. Number of buildings erected, 2; cost $600. Amount expended on permanent improvements, $650. J. F. Card, Township Clerk, Plevna.

CLARKE, Tp.—Evaporator started. Amount expended on permanent improvements, $3,882. Amount expended on sanitation, $54. John Rickaby, Township Clerk, Orono.

CLIFFORD, V.—Owns and operates acetylene gas lighting plant, cost $3,000; weigh scales, cost $600. Good opening for woodenware factory. One new building erected, cost $19,000. Amount expended on permanent improvements, $573. Amount expended on sanitation, $19. J. R. Aitchison, Village Clerk, Clifford.

CLINTON, Tn.—Owns and operates waterworks, cost $60,000; electric light plant, cost $20,000. Openings for industries of any character. One new build-

ing erected, cost $2,000. Amount expended on permanent improvements, $4,062. D. L. Macpherson, Town Clerk, Clinton.

Clinton, Tp.—Good opening for basket factory and canning factory. Amount expended on permanent improvements, $5,776. G. W. Timlin, Township Clerk, Beamsville.

Clyde, Tp.—See Dysart, etc., Tps.

Cobalt, Tn.—Owns and operates waterworks and sewage, cost $125,000. Good opening for distillery. Number of buildings erected, 13; cost $37,950. Amount expended on permanent improvements, $20,000. Amount expended on sanitation, $8,000. R. L. O'Gorman, Town Clerk, Cobalt.

Cobden, V.—Flour mill started. Good opening for brick and tile yard. Number of buildings erected, 4; cost $27,000. Amount expended on permanent improvements, $1,701. Amount expended on sanitation, $316. J. R. Warren, Village Clerk, Cobden.

Cobourg, Tn.—Wire factory started. Good opening for boot and shoe factory, whitewear factory. Number of buildings erected, 33; cost $82,500. Amount expended on permanent improvements, $4,731. Amount expended on sanitation, $184. D. H. Minaker, Town Clerk, Cobourg.

Cochrane, Tn.—Saw and planing mills started. Owns and operates waterworks system, cost $90,000. Good opening for brick plant, flour mill, or any manufacturing plant. Number of buildings erected. 375; cost $725,000. Amount expended on permanent improvements. $18.000. H. J. Brown, Town Clerk, Cochrane.

Cockburn Island, Tp.—Saw and turning mill started. Good openings for brick yard, saw mill and cement factory. Number of buildings erected, 3; cost $4,000. Amount expended on permanent improvements, $500. D. J. McLeod, Township Clerk, Cockburn Island.

Colborne, Tp.—Number of buildings erected, 8: cost $13,000. Amount expended on permanent improvements, $2,582. R. McIlwain, Township Clerk, Nile.

Colborne, V.—Canning factory started. No new buildings erected. Amount expended on permanent improvements, $1,250. G. Keyes, Village Clerk, Colborne.

Colchester N., Tp.—Canning factory started. Owns and operates telephone system, cost $10,604. Good opening for brick and tile yard, excelsior factory. Number of buildings erected, 20; cost $17,000. Amount expended on permanent improvements, $3,875. L. C. Hillis, Township Clerk, Gesto.

Colchester S., Tp.—Openings for industries of any character. Number of buildings erected, 15; cost $30,000. Amount expended on permanent improvements, $3,100. Amount expended on sanitation, $20. J. H. Madill, Township Clerk, Harrow.

Coldwater, V.—Brickyard started. Owns and operates waterworks, cost $23,000. Openings for industries of any character. Number of buildings erected, 3; cost $10,000. Amount expended on permanent improvements, $2,200. H. Chester, Village Clerk, Coldwater.

Coleman, Tp.—No new buildings erected. Amount expended on permanent improvements, $64,362. Amount expended on sanitation, $113. P. J. Hart, Township Clerk, Cobalt.

Collingwood, Tn.—Owns and operates waterworks, cost $74,000; electric light plant, cost $30,000. Number of buildings erected, 8: cost $20,000. Amount

expended on permanent improvements, $9,000. Amount expended on sanitation, $500. J. H. Duncan, Town Clerk, Collingwood.

Collingwood, Tp.—Owns and operates waterworks for fire protection, cost $7,000. Good opening for industries of any character. Number of buildings erected, 5; cost $3,600. Amount expended on permanent improvements, $10,000. E. Rorke, Township Clerk, Thornbury.

Copper Cliff, Tn.—Number of buildings erected, 73; cost $114,800. Amount expended on permanent improvements, $3,253. Amount expended on sanitation, $754. T. Stoddard, Town Clerk, Copper Cliff.

Cornwall, Tn.—Clothing factory started. Openings for industries of any character. Number of buildings erected, 12; cost $20,000. Amount expended on permanent improvements, $4,000. J. G. Harkness, Town Clerk, Cornwall.

Cornwall, Tp.—Good openings for canning factory, brick yard, paper industry, cement works, hardware factory. Number of buildings erected, 6; cost $8,000. Amount expended on permanent improvements, $4,800. Amount expended on sanitation, $1,300. J. Mullin, Township Clerk, Cornwall Centre.

Courtright, V.—Openings for industries of any character. No new buildings erected. Amount expended on permanent improvements, $999. R. G. Stewart, Village Clerk, Courtright.

Cramahe, Tp.—Openings for canning factory. Number of buildings erected, 7; cost $8,550. Amount expended on permanent improvements, $3,620. Amount expended on sanitation, $20. C. A. Wilson, Township Clerk, Castleton.

Creemore, V.—Owns and operates waterworks, cost $25,000. Good opening for canning factory. Number of buildings erected, 3; cost $6,500. Amount expended on permanent improvements, $100. A. H. Watson, Village Clerk, Creemore.

Crosby N., Tp.—Number of buildings erected, 2; cost $3,500. Amount expended on permanent improvements, $808. W. McKnight, Township Clerk, Westport.

Crosby S., Tp.—Number of buildings erected, 4; cost $2,000. Amount expended on permanent improvements, $1,856. J. R. Dungavel, Township Clerk, Elgin.

Crowland, Tp.—New smelting works started. Openings for industries of any character. Number of buildings erected, 100; cost $150,000. Amount expended on permanent improvements, $2,130. Amount expended on sanitation, $950. H. L. Pratt, Township Clerk, Welland.

Crozier, Tp.—See Alberton Tp.

Culross, Tp.—Owns and operates telephone system, cost $3,360. Number of buildings erected, 2; cost $1,600. Amount expended on permanent improvements, $2,000. Amount expended on sanitation, $30. C. Button, Township Clerk, Teeswater.

Cumberland, Tp.—Good openings for brick yard, glass factory, saw mill. Number of buildings erected, 15; cost $8,600. Amount expended on permanent improvements, $4,000. W. W. Dunning, Township Clerk, Cumberland.

Dack, Tp.—Good opening for pulp mill, brick works. Number of buildings erected, 8; cost $7,000. Amount expended on permanent improvements, $322. Amount expended on sanitation, $35. J. K. Dugan, Township Clerk, Charlton.

Dalhousie and Sherbrooke N., Tp.—Opening for any industry using hard-

wood. Number of buildings erected, 10; cost $3,000. Amount expended on permanent improvements, $875. W. Geddes, Township Clerk, Dalhousie Lake.

Dalton, Tp.—One new building erected, cost $1,000. Amount expended on permanent improvements, $500. B. Nicholson, Township Clerk, Sebright.

Darling, Tp.—Good opening for graphite mine. No new buildings erected. Amount expended on permanent improvements, $233. T. D. King, Township Clerk, Tatlock.

Dawn, Tp.—Owns and operates telephone system, cost $11,000. Number of buildings erected, 3; cost $2,500. Amount expended on permanent improvements, $2,600. J. M. Webster, Township Clerk, Rutherford.

Day and Bright, Additional Tps.—Good opening for cheese factory or creamery. Number of buildings erected, 4; cost $4,000. Amount expended on permanent improvements, $500. Amount expended on sanitation, $60. C. Cavanagh, Township Clerk, Sowerby.

Delaware, Tp.—Saw mill started. Good openings for milk condensor and grist mill. Number of buildings erected, 3: cost $3,000. Amount expended on permanent improvements, $5,000. Amount expended on sanitation, $125. J. H. Matthews, Township Clerk, Delaware.

Delhi, V.—Saw mill, canning factory, clothing factory started. Openings for industries of any character. No new buildings erected. Amount expended on permanent improvements, $2,213. Amount expended on sanitation, $59. R. Crysler, Village Clerk, Delhi.

Denigh, Abinger and Ashby, Tps.—Good opening for a shoemaker. Number of buildings erected, 5; cost $1,600. Amount expended on permanent improvements, $180. Amount expended on sanitation, $5. P. Stein, Township Clerk, Denbigh.

Denison, Tp.—See Drury, Denison and Graham Tps.

Derby, Tp.—Number of buildings erected, 4: cost $5,500. Amount expended on permanent improvements, $3,204. Amount expended on sanitation, $143. W. Beaton, Township Clerk, Owen Sound.

Dereham, Tp.—Good opening for brick and tile yard. Number of buildings erected, 12; cost . Amount expended on permanent improvements, $9,087. Amount expended on sanitation, $188. A. Bell, Township Clerk, Verschoyle.

Deseronto, Tn.—Canning factory started. Owns and operates waterworks, cost $48,300; gas works, cost $19,000. Good openings for industries of any character. Number of buildings erected, 2; cost $200. Amount expended on permanent improvements, $1,295. Amount expended on sanitation, $1,255. H. R. Bedford, Town Clerk, Deseronto.

Digby, Tp.—See Laxton, Digby and Longford Tps.

Dilke, Tp.—Good opening for brick yard and box factory. Number of buildings erected, 2: cost $1,650. Amount expended on permanent improvements, $1,567. F. Longmore, Township Clerk, Pinewood.

Dorchester N., Tp.—Good opening for condensed milk factory, powder factory, and canning factory. Amount expended on permanent improvements, $5,000. W. B. Lane, Township Clerk, Dorchester Station.

Dorchester S., Tp.—Number of buildings erected, 20: cost $20,000. Amount expended on permanent improvements, $500. D. Taylor, Township Clerk, Belmont.

Douro, Tp.—Number of buildings erected, 2; cost $1,200. Amount expended on permanent improvements, $1,769. F. D. Leahy, Township Clerk, Lakefield.

Dover, Tp.—Owns and operates telephone system, cost $3,500. Opening for grist mill. Number of buildings erected, 12; cost $10,200. Amount expended on permanent improvements, $2,431. Amount expended on sanitation, $200. J. Welsh, Township Clerk, Chatham.

Downie, Tp.—Number of buildings erected, 9; cost $17,000. Amount expended on permanent improvements, $11,291. Amount expended on sanitation, $119. D. Smith, Township Clerk, Stratford.

Draper, Tp.—One new building erected, cost $400. Amount expended on permanent improvements, $1,400. D. Cairns, Township Clerk, Uffington.

Drayton, V.—Good opening for brick yard. One new building erected, cost $950. Amount expended on permanent improvements, $1,056. Amount expended on sanitation, $60. A. C. Woodman, Village Clerk, Drayton.

Dresden, Tn.—Owns and operates electric light plant, cost $15,000; waterworks for fire protection, cost $16,900. Openings for industries of any character. One new building erected, cost $16,000. Amount expended on permanent improvements, $1,153. J. T. Bridgewater, Town Clerk, Dresden.

Drummond, Tp.—Number of buildings erected, 15; cost $15,000. Amount expended on permanent improvements, $907. Amount expended on sanitation, $49. E. R. Stedman, Township Clerk, Perth.

Drury, Denison, and Graham, Tps.—Number of buildings erected, 3; cost $2,000. Amount expended on permanent improvements, $2,082. Amount expended on sanitation, $839. L. T. E. Leonard, Mond.

Dryden, Tn.—Paper mill started. Good openings for photographer, harness maker, dentist, sash and door factory, flour mill, painter and paper hanger, veterinary, music store. Number of buildings erected, 4; cost $11,000. Amount expended on permanent improvements, $999.61. Amount expended on sanitation, $125. Ira J. Wilde, Town Clerk, Dryden.

Dudley, Tp.—See Dysart, etc., Tps.

Dumfries, N., Tp.—Soap factory started. Number of buildings erected, 7; cost, $28,000. Amount expended on permanent improvements, $4,400. J. Wrigley, Township Clerk, Ayr.

Dumfries, S., Tp.—Fire protection, $3,000. Amount expended on permament improvements, $4,737.68. Amount expended on sanitation, $110.35. H. S. Man, Township Clerk, Paris.

Dummer, Tp.—Amount expended on permanent improvements, $1,300. Amount expended on sanitation, $35. R. Dean, Township Clerk, Warsaw.

Dungannon, Tp.—Marble industry started. Good opening for industries of any character. One new building erected, cost $500. Amount expended on permanent improvements, $800. Amount expended on sanitation, $50. John Lumb, Township Clerk, L'Amable.

Dundalk, V.—Owns and operates electric light plant, cost $6,000. Good opening for furniture factory. No new buildings erected. Amount expended on permanent improvements, $3,045. Amount expended on sanitation, $18. M. W. Ridley, Village Clerk, Dundalk.

Dundas, Tn.—Owns and operates waterworks, cost $71,163; electric light plant, cost $35,530. Good openings for industries of any character. Number of buildings erected, 23; cost $52,500. Amount expended on permanent improve-

ments, $12,518.54. Amount expended on sanitation, $112.25. J. S. Fry, Town Clerk, Dundas.

DUNN, Tp.—Good opening for brick and tile yard. Number of buildings erected, 9; cost $6,300. Amount expended on permanent improvements, $100. O. Dichhout, Township Clerk, Byng.

DUNVILLE, Tn.—Owns and operates waterworks, cost $55,000. Good opening for iron works, etc. Number of buildings erected, 38; cost $60,000. Amount expended on permanent improvements, $12,000. Amount expended on sanitation, $5,000. J. W. Holmes, Town Clerk, Dunnville.

DURHAM, Tn.—Good opening for sash and door factory or any other small industries. Number of buildings erected, 8; cost $16,000. Amount expended on permanent improvements, $4,000. W. B. Vollet, Town Clerk, Durham.

DUTTON, V.—Saw mill and evaporator started. Good opening for canning factory and berry box factory. Number of buildings erected, 6; cost $12,000. Amount expended on permanent improvements, 8,347. J. D. Blue, Village Clerk, Dutton.

DYMOND, Tp.—Good opening for creamery and stave factory. Number of buildings erected, 4; cost $5,550. Amount expended on permanent improvements, $3,808.30. Amount expended on sanitation, $5. E. F. Stephenson, Township Clerk, New Liskeard.

DYSART, ETC., Tps.—Two portable saw mills started. Owns and operates street lighting system, cost $400. Good opening for saw mill, stave factory, furniture factory, broom handle, basket, and canoe factory, also tourist hotel. Number of buildings erected, 25; cost $25,000. Amount expended on permanent improvements, $14,000. G. H. Potts, Township Clerk, Haliburton.

EASTHOPE, S., Tp.—Good opening for brick plant, milk condensor. Number of buildings erected, 2; cost $3,500. Amount expended on permanent improvements, $2,003. V. Stock, Township Clerk, Tavistock.

EASTHOPE, N., Tp.—Owns and operates telephone system, cost $22,000. Number of buildings erected, 9; cost $6,500. Amount expended on permanent improvements, $5,491. J. D. Fisher, Township Clerk, Amulree.

EASTNOR, Tp.—Number of buildings erected, 4; cost $4,200. Amount expended on permanent improvements, $3,143.49. L. E. Burns, Township Clerk, Lion's Head.

EASTVIEW, V.—Good openings for various industries. Number of buildings erected, 50; cost $25,000. Amount expended on permanent improvements, $12,000. H. R. Washington, Village Clerk, Cummings Bridge.

EDWARDSBURG, Tp.—Number of buildings erected, 25; cost $35,000. Amount expended on permanent improvements, $3,000. Amount expended on sanitation, $25. M. McGuire, Township Clerk, Spencerville.

EFFINGHAM, Tp.—See Kaladar, Anglesea, and Effingham Tps.

EGREMONT, Tp.—Saw mill started. Good opening for chopping mill. Number of buildings erected, 2; cost $2,500. Amount expended on permanent improvements, $2,659.67. Amount expended on sanitation, $70.15. D. Allan, Township Clerk, Holstein.

EKFRID, Tp.—Good opening for baker, laundry man, wagon maker and agricultural labourers. Number of buildings erected, 19; cost $24,000. Amount expended on permanent improvements, $2,500. A. P. McDougald, Township Clerk, Melbourne.

ELDERSLIE, Tp.—Number of buildings erected, 14; cost $14,000. Amount

expended on permanent improvements, $4,900. Amount expended on sanitation, $25. R. C. Pearce, Township Clerk, Paisley.

ELDON, Tp.—Number of buildings erected, 10; value $15,000. Amount expended on permanent improvements, $4,747.16. B. Stacey, Township Clerk, Lorneville.

ELIZABETHTOWN, Tp.—Good opening for canning factory. Number of buildings erected, 6; cost $5,800. Amount expended on permanent improvements, $15,092.34. Amount expended on sanitation, $118.70. J. S. Webster, Township Clerk, Bellamy's.

ELLICE, Tp.—Good opening for harness maker. Number of buildings erected, 25; cost $5,800. Amount expended on permanent buildings, $3,442.24. Amount expended on sanitation, $243.25. J. Kreuter, Township Clerk, Restock.

ELMA, Tp.—Good opening for sash and door factory, condensed milk factory. Number of buildings erected, 14; cost $18,000. Amount expended on permanent improvements, $4,480. Amount expended on sanitation, $184. G. Lochhead, Township Clerk, Atwood.

ELMIRA, V.—Shoe factory started. Owns and operates waterworks, cost $34,000. Good openings for industries of any character. Number of buildings erected, 20; cost $35,000. Amount expended on permanent improvements, $3,881. J. H. Rupple, Village Clerk, Elmira.

ELMSLEY, N., Tp.—Number of buildings erected, 7; cost $3,500. Amount expended on permanent improvements, $1,500. Amount expended on sanitation, $20. R. M. Imeson, Township Clerk, Perth.

ELMSLEY, S., Tp.—Good opening for a bakery. One new building erected, cost $50. Amount expended on permanent improvements, $1,595.88. J. Robb, Township Clerk, Lombardy.

ELORA, V.—Number of buildings erected, 3; cost $7,000. Amount expended on permanent improvements, $500. H. Clarke, Village Clerk, Elora.

ELZEVIR AND GRIMSTHORP, Tps.—No new buildings erected. Amount expended on permanent improvements, $1,661. W. J. Rhodes, Township Clerk, Queensboro.

EMBRO, V.—Good opening for canning factory, flax mill, machine shop. Amount expended on permanent improvements, $4,500. E. J. Cody, Village Clerk, Embro.

EMILY, Tp.—Number of buildings erected, 11; cost $8,500. Amount expended on permanent improvements, $2,361. R. J. Grandy, Township Clerk, Omemee.

EMO, Tp.—Good opening for cheese factory, creamery, barrel, stair, and hoop factory, flour mill. Number of buildings erected, 40; cost $30,000. Amount expended on permanent improvements, $5,000. D. Strachan, Township Clerk, Emo.

ENGLEHART, Tn.—Good opening for brickyard, sash and door factory, pulp mill, departmental store. Number of buildings erected, 8; cost $2,625. Amount expended on permanent improvements, $384.40. Amount expended on sanitation, $315. J. H. Field, Town Clerk, Englehart.

ENNISMORE, Tp.—Good opening for butcher shop. Number of buildings erected, 5; cost $5,000. Amount expended on permanent improvements, $1,900. Amount expended on sanitation, $40. J. Moloney, Township Clerk, Ennismore.

ERAMOSA, Tp.—Owns and operates electric lighting plant, cost $6,000. Number of buildings erected, 18: cost $18,000. Amount expended on permanent improvements, $2,500. Amount expended on sanitation, $200. W. M. Head, Township Clerk, Guelph.

ERIN, Tp.—Number of buildings erected, 4: cost $4,000. Amount expended on permanent improvements, $2,100. Amount expended on sanitation, $32. P. McLaren, Township Clerk, Hillsburgh.

ERIN, V.—Good opening for woollen mill. No new buildings erected. Amount expended on permanent improvements, $1,100. W. Conboy, Village Clerk, Erin.

ERNESTTOWN, Tp.—Amount expended on permanent improvements, $3,362.37. Amount expended on sanitation, $44.50. E. O. Clark, Township Clerk, Odessa.

ESCOTT, Front, Tp.—Number of buildings erected, 5; cost $8,500. Amount expended on permanent improvements, $3,172. Amount expended on sanitation, $36. E. T. Hutchison, Township Clerk, Escott.

ESQUESING, Tp.—Good opening for canning factory, apple evaporator. Number of buildings erected, 20; cost $26,000. Amount expended on permanent improvements, $6,886. J. A. Tracy, Township Clerk, Esquesing.

ENNISKILLEN, Tp.—Amount expended on permanent improvements, $10,100. Amount expended on sanitation, $2. G. V. Wyant, Township Clerk, Petrolea.

ESSA, Tp.—No new buildings erected. Amount expended on permanent improvements, $5,000. J. Coxworth, Township Clerk, Ivy.

ESSEX, Tn.—Owns and operates waterworks, cost $35,000. Good openings for industries of any character. Number of buildings erected, 6; cost $11,000. Amount expended on permanent improvements, $1,938.59. Amount expended on sanitation, $50. W. D. Beaman, Town Clerk, Essex.

ETOBICOKE, Tp.—Pressed brick works started. Good openings for industries of any character. Number of buildings erected, 200; cost $200,000. Amount expended on permanent improvements, $20,000. J. A. L. Macpherson, Township Clerk, Islington.

EUPHEMIA, Tp.—Good opening for a medical man. Number of buildings erected, 2; cost $2,000. Amount expended on permanent improvements, $2,346. Amount expended on sanitation, $20. D. M. Smith, Township Clerk, Cairo.

EUPHRASIA, Tp.—Municipal telephone system under construction. Number of buildings erected, 8: cost $5,000. Amount expended on permanent improvements, $3,300. N. L. Curry, Township Clerk, Rocklyn.

EVANTUREL, Tp.—Sawmill started. Good opening for sawmill. Number of buildings erected, 4; cost $3,000. Amount expended on permanent improvements, $1,423. P. T. Broome, Township Clerk, Heaslip.

EXETER, V.—Owns and operates waterworks, costs $27,520. Good opening for knitting factory. Number of buildings erected, 6; cost $16,000. Amount expended on permanent improvements, $5,000. Amount expended on sanitation, $4,000. T. B. Carling, Village Clerk, Exeter.

EYRE, Tp.—See Dysart, etc., Tps.

FARADAY, Tp.—No new buildings erected. Amount expended on permanent improvements, $525. W. A. Davy, Township Clerk, Bancroft.

FENELON, Tp.—Number of buildings erected, 2 barns and a few driving houses; cost $5,000. Amount expended on permanent improvements, $2,500. J. B. Powles. Township Clerk, Powles' Corners.

FENELON FALLS, V.—Owns and operates electric light plant, cost $69,623. Good openings for industries of any character. No new buildings erected. E. Fitzgerald, Village Clerk, Fenelon Falls.

FERGUS, V.—Owns and operates waterworks, cost $35,000. Good opening for packing house, canning factory, agricultural implements, etc. Number of buildings erected, 22: cost $40,000. Amount expended on permanent improvements, $2,268. James Beattie, Village Clerk, Fergus.

FERRIS, Tp.—Good opening for cheese factory. Number of buildings erected, 10; cost $3,000. Amount expended on permanent improvements, $340. Amount expended on sanitation, $69.63. S. Moreau, Township Clerk, Corbeil.

FINCH, V.—Number of buildings erected, 2; cost $10,800. Amount expended on permanent improvements, $175.92. J. W. Carr, Village Clerk, Finch.

FINCH, Tp.—Good opening for tile and sewer pipe factory. Number of buildings erected, 10; cost $10,000. Amount expended on permanent improvements, $5,315. Amount expended on sanitation, $15. D. B. Cameron, Township Clerk, Finch.

FITZROY, Tp.—Owns and operates telephone system, cost $4,000. Good opening for mills, factories, etc. Number of buildings erected, 12; cost $13,800. Amount expended on permanent improvements, $2,000. A. Murphy, Township Clerk, Antrim.

FLAMBOROUGH, E., Tp.—Number of buildings erected, 8; cost $6,200. Amount expended on permanent improvements, $3,460. Amount expended on sanitation, $119. George Church, Township Clerk, Box 4, Waterdown.

FLAMBOROUGH, W., Tp.—Number of buildings erected, 7; cost $5,000. Amount expended on permanent improvements, $3,900. Amount expended on sanitation, $140. Ira N. Binkley, Township Clerk, Greensville.

FLESHERTON, V.—One new building erected, cost $1,000. Amount expended on permanent improvements, $2,100. Amount expended on sanitation, $125. W. H. Thurston, Village Clerk, Flesherton.

FLOS, Tp.—Good opening for foundry, woollen mill, cement works, brick and tile yard. Number of buildings erected, 2; cost $2,400. Amount expended on permanent improvements, $3,000. C. S. Burton, Township Clerk, Elmvale.

FOLEY, Tp.—Good opening for hard wood saw mill and summer hotel. No new buildings erected. Amount expended on permanent improvements, $1,226 Amount expended on sanitation, $181.35. Andrew Oastler, Township Clerk, James Bay Junction.

FOREST, Tn.—Canning factory started. Good opening for broom factory, pickle factory, jam factory, handle factory. Number of buildings erected, 7; cost $36,500 Amount expended on permanent improvements, $740. Amount expended on sanitation, $135. R. Karn, Town Clerk, Forest.

FORT ERIE, V.—Owns and operates waterworks, value $58,723.26; street lighting plant, $3,783.68. Good openings for industries of any character. Number of buildings erected, 8; cost $12,000. Amount expended on permanent improvements, $1,100. W. Simnons, Village Clerk, Fort Erie.

FORT FRANCES, Tn.—Sash and door factory started. Owns and operates waterworks, $83,614.60; electric light plant, $17,837.89. Good opening for wood work, lumbering, flour mill, etc. Number of buildings erected, 30; cost $45,000 Amount expended on permanent improvements, $9,000. Amount expended on sanitation, $8,000. J. W. Walker, Town Clerk, Fort Frances.

FORT WILLIAM, C.—Railway box cars, starch and glucose, seamless steel tube beds and bedding, wire and fencing, tile and pressed brick, wire and wire nail railway equipment, pressed brick industries started. Owns and operates waterwork cost $870,474; street railway, cost $165,368; electric light, cost $227,150; telephon system, cost $191.485. Openings for industries of any character. Number of buil ings erected, 400; cost $4,211,285. Amount expended on permanent improvement $71,883. Amount expended on sanitation, $125,165. A. McNaughton, City Cler Fort William.

Fredericksburgh, N., Tp.—Number of buildings erected, 5; cost $2,000. Amount expended on permanent improvements, $848.97. Amount expended on sanitation, $30. M. A. Sills, Township Clerk, Napanee.

Fredericksburgh, S., Tp.—Grist mill started. Good opening for canning factory, condensed milk factory, and general blacksmith. Number of buildings erected, 4; cost $4,000. Amount expended on permanent improvements. $725. G. T. Ham, Township Clerk, Conway.

Fullarton, Tp.—Number of buildings erected, 6; cost $18,000. E. H. Pomeroy, Township Clerk, Fullarton

Gainsborough, Tp.—Good opening for industries requiring electric power. Number of buildings erected, 10; cost $15,450. Amount expended on permanent improvements, $1,000. S. W. Freure, Township Clerk, Wellandport.

Galt, Tn.—Elevator works, fabrics and taps and dies industries started. Owns and operates waterworks, cost $200,000; hydro-electric light and power plant, cost $136,000. Good opening for iron industries, woollen industries and light industries requiring electric power. Number of buildings erected, 240; cost $506,130. Amount expended on permanent improvements, $34,361. Amount expended on sanitation, $18,255. Joseph McCartney, Town Clerk, Galt.

Galway and Cavendish, Tps.—Good opening for cheese factory. No new buildings erected. Amount expended on permanent improvements, $500. P. Collins, Township Clerk, Mount Irwin.

Gananoque, Tn.—Owns and operates waterworks, value $150,000. Good opening for industries of any character. Number of buildings erected, 11; cost $120,900. Amount expended on permanent improvements, $5,000. S. McCammon, Town Clerk, Gananoque.

Garafraxa, E., Tp.—Good opening for blacksmith. Amount expended on permanent improvements, $3,790. Amount expended on sanitation, $52.50. J. Preston, Township Clerk, Marsville.

Garafraxa, W., Tp.—Number of buildings erected, 2; cost $3,500. Amount expended on permanent improvements, $2,500. J. Campbell, Township Clerk, Belwood.

Garden Island, V.—No new buildings erected. Amount expended on permanent improvements, $150. J. D. Calvin, Village Clerk, Garden Island.

Georgetown, V.—Foundry started. Owns and operates waterworks, cost $43,000. Good openings for industries of any character. Number of buildings erected, 20; cost $40,000. Amount expended on permanent improvements, $6,000. Amount expended on sanitation, $87.60. H. W. Kennedy, Village Clerk, Georgetown.

Georgina, Tp.—Number of buildings erected, 6; cost $7,500. Amount expended on permanent improvements, $4,876. D. Ego, Township Clerk, Virginia.

Glamorgan, Tp.—Good opening for carding mill and woodworking industry. Amount expended on permanent improvements, $19.20. D. Williams, Township Clerk, Gooderham.

Glanford, Tp.—Number of buildings erected, 10; cost $20,000. D. Reed. Township Clerk, Glanford.

Glencoe, V.—Owns and operates electric light plant, cost $20,000. Good opening for canning factory and handle factory. Number of buildings erected, 2; cost $2,000. Amount expended on permanent improvements, $1,597.47. Amount expended on sanitation, $96. G. Wilson, Village Clerk, Glencoe.

Glenelg, Tp.—Good openings for various industries. Number of buildings

erected, 5; cost $5,000. Amount expended on permanent improvements, $2,560. Amount expended on sanitation, $50. J. S. Black, Township Clerk, Pomona.

GLOUCESTER, Tp.—The village of Rickliff owns and operates waterworks system, cost $5,000. Amount expended on permanent improvements, $6,000. Amount expended on sanitation, $585. H. B. Billings, Township Clerk, Billings Bridge.

GODERICH, Tn.—Door factory and factory for toilet preparations started. Owns and operates waterworks and electric light plant, cost $131,674. Good opening for canning factory, salt works, lumber yard at dock. Number of buildings erected, 49; cost $98,000. Amount expended on sanitation, $24,636. L. L. Knox, Town Clerk, Goderich.

GODERICH, Tp.—Owns and operates telephone system, value $11,330. Number of buildings erected, 9; cost $9,500. Amount expended on permanent improvements, $300. N. W. Trewartha, Township Clerk, Holmesville.

GORDON, Tp.—Good opening for saw mill and canning factory. Number of buildings erected, 7; cost $3,000. Amount expended on permanent improvements, $1,800. J. Gibson, Township Clerk, Foxey.

GORE BAY, Tn.—Good opening for saw mill and box factory. Number of buildings erected, 4; cost $15,000. Amount expended on permanent improvements, $400. J. W. Kinney, Town Clerk, Gore Bay.

GOSFIELD, N., Tp.—Owns and operates telephone system, value $18,850. Good opening for tobacco factory. Number of buildings erected, 11; cost $20,000. Amount expended on permanent improvements, $6,852. Amount expended on sanitation, $40. W. H. Noble, Township Clerk, Cottam.

GOSFIELD, S., Tp.—Cold storage industry started. Good opening for brick and tile yard. Number of buildings erected, 31; cost $27,295. Amount expended on permanent improvements, $6,339. G. W. Coatsworth, Township Clerk, Kingsville.

GOULBURN, Tp.—Number of buildings erected, 4; cost $1,250. Amount expended on permanent improvements, $4,314. J. A. Cummings, Township Clerk, Hazeldean.

GOWER, N., Tp.—Good opening for cement block and tile yard, sash and door factory, and harness maker. Number of buildings erected, 3; cost $18,200. Amount expended on permanent improvements, $1,700. J. E. Craig, Township Clerk, North Gower.

GOWER, S., Tp.—No new buildings erected. Amount expended on permanent improvements, $547. E. Pelton, Township Clerk, South Gower.

GRAHAM, Tp.—See Drury, Denison, and Graham Tps.

GRAND VALLEY, V.—Wooden bed factory started. Good opening for woollen mills, foundry, etc. Number of buildings erected, 3; cost $8,000. Amount expended on permanent improvements, $800. Amount expended on sanitation, $167. J. A. Richardson, Village Clerk, Grand Valley.

GRANTHAM, Tp.—Good openings for industries of any character. Number of buildings erected, 20; cost $20,500. Amount expended on permanent improvements, $2,894. Amount expended on sanitation, $40. L. S. Bessey, Township Clerk, St. Catharines.

GRATTAN, Tp.—Good opening for furniture factory. Amount expended on permanent improvements, $1,000. Amount expended on sanitation, $50. John George, Township Clerk, Eganville.

GRAVENHURST, Tn.—Owns and operates electric light plant, value $90,000; waterworks, value $30,000. Good opening for woodworking industry and chemical

works. Number of buildings erected, 3; cost $5,500. W. H. Cross, Town Clerk, Gravenhurst.

Greenoch, Tp.—Amount expended on permanent improvements, $3,428. Amount expended on sanitation, $261. Thos. H. Purdy, Township Clerk, Narva.

Grey, Tp.—Fanning mills factory started. Number of buildings erected, 3; cost $5,000. Amount expended on permanent improvements, $16,894. A. H. Macdonald, Township Clerk, Ethel.

Griffith and Matawatchan, Tps.—Good opening for flour mill and furniture factory. Amount expended on permanent improvements, $250. A. Legree, Township Clerk, Khartum.

Grimsby, N., Tp.—Number of buildings erected, 14; cost $17,550. Amount expended on permanent improvements, $4,525.42. Amount expended on sanitation, $130.59. T. W. Allan, Township Clerk, Winona.

Grimsby, S., Tp.—Saw and planing mill and creamery started. Number of buildings erected, 4; cost $7,500. Amount expended on permanent improvements, $6,500. F. W. Roberts, Township Clerk, Smithville.

Guelph, C.—Milk products factory, knitting factory, electric irons factory, carpet factory, casket factory, rubber factory, malleable iron foundry started. Owns and operates waterworks, cost $344,774; gas and electric light plant, cost $363,552.83; street railway, cost $152,478.45. Good opening for agricultural implement factory, furniture factory, textile goods, etc. Number of buildings erected, 100; cost $380,000. Amount expended on permanent improvements, $65,163.70. Amount expended on sanitation, $18,558.50. T. J. Moore, City Clerk, Guelph.

Guelph, Tp.—Linoleum factory started. Good opening for factories. Amount expended on permanent improvements, $3,800. J. Laidlaw, Township Clerk, Guelph.

Guildford, Tp.—See Dysart, etc., Tps.

Gwillimbury, E., Tp.—Number of buildings erected, 6; cost $3,000. Amount expended on permanent improvements, $4,000. A. R. Mackenzie, Township Clerk, Queensville.

Gwillimbury, N., Tp.—Amount expended on permanent improvements, $2,097.82. F. L. Van Norman, Township Clerk, Keswick.

Gwillimbury, W., Tp.—One new building erected, cost $1,200. Amount expended on permanent improvements, $3,000. E. J. Evans, Township Clerk, Bradford.

Hagar, Tp.—Number of buildings erected, 3; cost $2,250. Amount expended on permanent improvements, $41.23. Mrs. T. A. Millichamp, Township Clerk, Markstay.

Hagarty and Richards, Tps.—Good opening for woollen factory and cement block and brick yard. Number of buildings erected, 3; cost $2,200. Amount expended on permanent improvements, $600. M. B. Grace, Township Clerk, Killaloe.

Hagarman, Tp.—Saw mill started. Number of buildings erected, 8; cost $2,250. Amount expended on permanent improvements, $63.50. Amount expended on sanitation, $6.50. F. N. Macfie, Township Clerk, Dunchurch.

Hagersville, V.—Kendrick closets factory started. Owns and operates electric lighting system, cost $6,000. Good openings for various industries. Number of buildings erected, 5; cost $10,000. Amount expended on permanent improvements, $900. J. T. Park, Village Clerk, Hagersville.

Haileybury, Tn.—Owns and operates waterworks, cost $113,186.43. Good opening for woodworking industries. Number of buildings erected, 10; cost

$103,000. Amount expended on permanent improvements, $9,066.57. Amount expended on sanitation, $28,854.69. T. H. Connor, Town Clerk, Haileybury.

HALDIMAND, Tp.—Canning factory started. Good opening for canning factory. Number of buildings erected, 50; cost $50,000. Amount expended on permanent improvements, $4,265. Amount expended on sanitation, $143. R. Lawless, Township Clerk, Grafton.

HALLAM, Tp.—Good opening for cheese factory. Number of buildings erected, 5; cost $2,300. Amount expended on permanent improvements, $188. J. H. Toland, Township Clerk, Webbwood.

HALLOWELL, Tp.—Good opening for co-operative fruit packing plant. Number of buildings erected, 3; cost $2,500. Amount expended on permanent improvements, $1,050. E. B. Yarwood, Township Clerk, Picton.

HAMILTON, C.—Steel freight cars, steel castings, malleable iron castings, insulators, hosiery and underwear, knit goods, canned goods, structural steel, cigars, gas mantles, and brake beams industries started. Owns and operates waterworks, cost $3,466,156; power and light plant, cost $250,000. Good opening for manufacturers of machinery, boots and shoes, furniture, automobiles, gas engines, textile goods. Number of buildings erected, 2,391; cost $5,491,800. Amount expended on permanent improvements, $380,454.46. Amount expended on sanitation, $253,264. S. H. Kent, City Clerk, Hamilton.

HAMILTON, Tp.—No new buildings erected. Amount expended on permanent improvements, $4,944. Amount expended on sanitation, $115.86. J. D. Stewart, Township Clerk, Cobourg.

HANMER, Tp.—Number of buildings erected, 6; cost $25,000. Amount expended on permanent improvements, $1,500. L. T. Carriere, Township Clerk, Hanmer.

HANOVER, Tn.—Furniture factory and machine shop started. Owns and operates waterworks system, cost $38,000. Good opening for furniture factory, woollen factory, iron or machinery works, white wear, boots and shoes, automobile works. Number of buildings erected, 55; cost $90,000. Amount expended on permanent improvements, $850. J. Taylor, Town Clerk, Hanover.

HARBURN, Tp.—See Dysart, etc., Tps.

HARCOURT, Tp.—See Dysart, etc., Tps.

HARLEY, Tp.—Good opening for a creamery. Number of buildings erected, 4; cost $4,000. Amount expended on permanent improvements, $2,934. Amount expended on sanitation, $10. E. Cragg, Township Clerk, Hanbury.

HARRIS, Tp.—Good opening for lime kiln, cheese factory, brick and tile yard, well boring machine. Number of buildings erected, 5; cost $2,300. Amount expended on permanent improvements, $1,198. F. Wilson, Township Clerk, New Liskeard.

HARRISTON, Tn.—Owns and operates waterworks, cost $35,000; electric light plant, cost $11,000. Good opening for knitting factory. Number of buildings erected, 3; cost $9,000. Amount expended on permanent improvements, $1,200. Amount expended on sanitation, $75. A. J. Stewart, Town Clerk, Harriston.

HARROW, Tp.—See Salter, May and Harrow Tps.

HARVEY, Tp.—Saw mill started. Good opening for woodworking industry. Amount expended on permanent improvements, $1,933.65. D. Weir, Township Clerk, Lakehurst.

HARWICH, Tp.—Number of buildings erected, 10; cost $15,000. Amount expended on permanent improvements, $8,000. Amount expended on sanitation, $100. G. W. Riseborough, Township Clerk, Blenheim.

HASTINGS, V.—Good opening for industries of any character. Number of buildings erected, 4; cost $2,200. Amount expended on permanent improvements, $800. Amount expended on sanitation, $25. W. Foulds, Village Clerk, Hastings.

HAVELOCK, Tp.—See Dysart, etc., Tps.

HAVELOCK, V.—Good opening for canning factory, woollen mill, woodenware factory. Number of buildings erected, 6; cost $14,400. Amount expended on permanent improvements, $800. J. W. Bryans, Village Clerk, Havelock.

HAWKESBURY, Tn.—Owns and operates waterworks system, cost $135,000. Good opening for paper mill and marble works. Number of buildings erected, 15; cost $32,000. Amount expended on permanent improvements, $820. E. Paquette, Town Clerk, Hawkesbury.

HAWKESBURY, E., Tp.—Good openings for industries of any character. Number of buildings erected, 20; cost $18,000. Amount expended on permanent improvements, $1,600. N. Labrosse, Township Clerk, St. Eugene.

HAWKESBURY, W., Tp.—Number of buildings erected, 20; cost $18,000. Amount expended on permanent improvements, $3,548.87. Amount expended on sanitation, $14. W. I. Dunning, Township Clerk, Vankleek Hill.

HAY, Tp.—Clothing factory started. Owns and operates telephone system, cost $17,000. Good opening for a brick and tile yard. Number of buildings erected, 4; cost $15,000. Amount expended on permanent improvements, $3,000. F. Hess, Township Clerk, Zurich.

HEAD, MARIA AND CLARA, Tps.—Good openings for industries requiring water power. No new buildings erected. John R. Beauchamp, Township Clerk, Stonecliffe.

HENSALL, V.—Good opening for iron foundry and moulding works. No new buildings erected. Amount expended on permanent improvements, $800. J. L. Scott, Village Clerk, Hensall.

HEPWORTH, V.—Good opening for furniture factory, flour mill. Number of buildings erected, 2; cost $3,000. Amount expended on permanent improvements, $167.49. Amount expended on sanitation, $127. W. R. White, Village Clerk, Hepworth.

HESPELER, Tn.—Foundry started. Owns and operates electric light plant, cost $30,000. Good opening for woodworking factory, furniture factory, iron working industries. Number of buildings erected, 33; cost $75,000. Amount expended on permanent improvements, $7,541. W. Brewster, Town Clerk, Hespeler.

HERSCHEL, Tp.—See Monteagle and Herschel Tps.

HIBBERT, Tp.—Good opening for any kind of industry. Amount expended on permanent improvements, $6,500. James Jordan, Township Clerk, Dublin.

HILLIARD, Tp.—Good opening for pulp mill, cheese factory, creamery. Number of buildings erected, 10; cost $800. Amount expended on permanent improvements, $2,029.80. C. Wood, Township Clerk, Hilliardton.

HILLIER, Tp.—Number of buildings erected, 5; cost $9,000. Amount expended on permanent improvements, $2,530. P. Wilson, Township Clerk, Hillier.

HILTON, Tp.—Good opening for woodenware industry. Number of buildings erected, 5; cost $3,000. Amount expended on permanent improvements, $223.96. W. E. Whybourne, Township Clerk, Marksville.

HIMSWORTH, N., Tp.—Good opening for planing mill, sash and door factory. No new buildings erected. Amount expended on permanent improvements, $689.20. J. R. Moon, Township Clerk, Callander.

HIMSWORTH, S., Tp.—Number of buildings erected, 5; cost, $5,000. Robt. Ferguson, Township Clerk, Powassan.

Hinchinbrooke, Tp.—Good opening for shoemaker. Number of buildings erected, 6; cost, $4,000. Amount expended on permanent improvements, $2,600. Amount expended on sanitation, $60. G. A. Smith, Township Clerk, Parham.

Hindon and Anson, Tps.—Number of buildings erected, 2; cost, $1,100. Amount expended on permanent improvements, $200. W. A. Welch, Township Clerk, Minden.

Holland Landing, V.—Good openings for industries of any character. No new buildings erected. Amount expended on permanent improvements, $400. F. J. Sheppard, Village Clerk, Holland Landing.

Hope, Tp.—Number of buildings erected, 6; cost, $10,000. Amount expended on permanent improvements, $5,296. T. Roberts, Township Clerk, Welcome.

Horton, Tp.—Number of buildings erected, 5; cost, $9,000. Amount expended on permanent improvements, $944. E. J. Stewart, Township Clerk, Renfrew.

Houghton, Tp.—Number of buildings erected, 4; cost, $4,000. Amount expended on permanent improvements, $1,365. W. V. Stevenson, Township Clerk, Houghton.

Howard, Tp.—Good opening for creamery. Amount expended on permanent improvements, $5,200. Amount expended on sanitation, $100. Geo. McDonald, Township Clerk, Ridgetown.

Howe Island, Tp.—Number of buildings erected, 3; cost, $1,200. Amount expended on permanent improvements, $134. J. Teavis, Township Clerk, Howe Island.

Howick, Tp.—Owns and operates telephone system, cost, $6,273. Number of buildings erected, 10; cost, $9,429. Amount expended on permanent improvements $8,993. Amount expended on sanitation, $112. C. E. Walker, Township Clerk, Gorrie.

Howland, Tp.—Woodenware factory and electric power plant started. Number of buildings erected, 7; cost, $6,600. Amount expended on permanent improvements, $1,635.51. Amount expended on sanitation, $22. J. L. Ferguson, Township Clerk, Sheguindah.

Hudson, Tp.—Saw mill and rural telephone started. Number of buildings erected, 7; cost, $2,500. E. Sackrider, Township Clerk, New Liskeard.

Hullett, Tp.—Good opening for cheese and butter factory. Number of buildings erected, 3; cost, $7,100. Amount expended on permanent improvements, $6,000. J. Campbell, Township Clerk, Londesboro.

Humberstone, V.—Opening for brick yard, stove foundry and machine shop, etc. Number of buildings erected, 19; cost, $25,000. Amount expended on permanent improvements, $1,085. J. J. Wichman, Village Clerk, Humberstone.

Humberstone, Tp.—Good opening for various industries. Number of buildings erected, 16; cost, $307,900. Amount expended on permanent improvements, $1,197. Amount expended on sanitation, $37. A. E. Near, Township Clerk, Gas Line.

Humphrey, Tp.—Number of buildings erected, 3; cost $6,000. Amount expended on permanent improvements, $3,000. A. A. Young, Township Clerk, Rosseau.

Hungerford, Tp.—Marble quarry started. Number of buildings erected, 20; cost $30,000. G. H. Stokes, Township Clerk, Tweed.

Huntingdon, Tp.—Stone crushing industry started. Good opening for can-

ning factory, condensed milk factory. Number of buildings erected, 5; cost $5,000. D. L. Fleming, Township Clerk, Ivanhoe.

Huntley, Tp.—Good opening for general store. Number of buildings erected, 8; cost $10,000. Amount expended on permanent improvements, $3,000. J. H. Wilson, Township Clerk, Carp.

Huntsville, Tn.—Owns and operates waterworks and electric light system, cost $63,609. Good opening for woodworking industries of any description. Number of buildings erected, 3; cost $3,000. Amount expended on permanent improvements, $1,500. T. M. Cullon, Town Clerk, Huntsville.

Huron, Tp.—Owns and operates telephone system, cost $40,000. Good opening for canning factory; evaporator. Number of buildings erected, 10; cost $12,000. Amount expended on permanent improvements, $9,075. Amount expended on sanitation, $266. A. Martyn, Township Clerk, Ripley.

Ignace, Tp.—No new buildings erected. Amount expended on permanent improvements, $200. W. Earles, Township Clerk, Ignace.

Ingersoll, Tn.—Owns and operates waterworks, value $125,00; electric light plant, value $100,000. Good opening for various industries. Number of buildings erected, 25: cost $100,000. Amount expended on permanent improvements, $5,000. W. R. Smith, Town Clerk, Ingersoll.

Innisfil, Tp.—Number of buildings erected, 16; cost $13,900. Amount expended on permanent improvements, $4,669. Amount expended on sanitation, $238. J. W. Black, Township Clerk, Stroud.

Iroquois, V.—Owns and operates waterworks and electric light system, cost $40,000. Good opening for any kind of industry. No new buildings erected. J. Flanagan, Village Clerk, Iroquois.

Jaffray and Melick, Tps.—Good opening for brick yard. Number of buildings erected, 10; cosst $3,500. Amount expended on permanent improvements, $628.72. C. W. Belyea, Township Clerk, Kenora.

James, Tp.—Good opening for mining industry, box shook factory, smelter and concentrator, pulp mill. Number of buildings erected, 10; cost $5,000. Amount expended on permanent improvements, $448. A. O. Reeves, Township Clerk, Elk Lake.

Jarvis, V.—Pickle factory and pump making industry started. Owns and operates street lighting plant. Good opening for canning factory and barrel factory. Number of buildings erected, 4; cost $3,200. Amount expended on permanent improvements, $800. C. E. Bourne, Village Clerk, Jarvis.

Jocelyn, Tp.—One new building erected, cost $600. Amount expended on permanent improvements, $254.70. J. G. Reesor, Township Clerk, Carterton.

Johnston, Tp.—Installing telephone system this year. Good opening for woodworking industry or dairy industry. Number of buildings erected, 11; cost $8,600. Amount expended on permanent improvements, $700. W. H. Butterworth, Township Clerk, Desbarats.

Joly, Tp.—Good opening for shingle and lath mills. Number of buildings erected, 2; cost $1,000. Amount expended on permanent improvements, $350. G. Harkness, Township Clerk, Sundridge.

Kaladar, Anglesea and Effingham, Tps.—Good opening for cheese boxes and fruit basket factory. No new buildings erected. Amount expended on permanent improvements, $551.80. M. Lessard, Township Clerk, Flinton.

Kearney, Tn.—Saw mill started. Good opening for sash and door factory, planing mill, veneer, stave and heading factory, wood alcohol factory. No new

buildings erected. Amount expended on permanent improvements, $312. Amount expended on sanitation, $50. J. J. Brosman, Town Clerk, Kearney.

KEEWATIN, Tn.—Boat building factory started. Good opening for flour mill, pulp mill, box and tub factory. Number of buildings erected, 5; cost $20,000. Amount expended on permanent improvements, $1,475. W. J. Craig, Town Clerk, Keewatin.

KEMPTVILLE, V.—Good opening for industries of any character. One new building erected, cost $500. Amount expended on permanent improvements, $1,400. S. H. Guest, Village Clerk, Kemptville.

KENNEBEC, Tp.—Amount expended on permanent improvements, $400. D. A. Osborne, Township Clerk, Arden.

KENORA, Tn.—Gold mine started. Maple Leaf Mill increased capacity 1,000 barrels. Owns and operates waterworks, cost $212,872; Hydro-electric power, cost $507,637; electric distribution system, cost $43,159; telephone system, cost $17,453. Good openings for flour mills, woodworking plants, smelting plants, etc. Number of buildings erected, 35; cost $150,000. Amount expended on permanent improvements, $32,000. Amount expended on sanitation, $1,500. G. C. Hay, Town Clerk, Kenora.

KEPPEL, Tp.—Good opening for woodworking industry. Amount expended on permanent improvements, $2,500. Amount expended on sanitation, $100. G. Atkey, Township Clerk, Wiarton.

KERNS, Tp.—Number of buildings erected, 4; cost $3,500. Amount expended on permanent improvements, $2,124. H. M. Ship, Township Clerk, Milberta.

KILLALOE STATION, V.—Good opening for box factory, pulp mill, woollen mill. Number of buildings erected, 2; cost $6,000. Amount expended on permanent improvements, $370. Amount expended on sanitation, $70. P. J. Harrington, Village Clerk, Killaloe Station.

KINCARDINE, Tn.—Owns and operates waterworks, cost $47,562; electric light plant, cost $21,810. Good opening for any kind of industry. No new buildings erected. Amount expended on permanent improvements, $4,933. Amount expended on sanitation, $154.80. J. H. Scougall, Town Clerk, Kincardine.

KINCARDINE, Tp.—Amount expended on permanent improvements, $4,500. R. B. Campbell, Township Clerk, Armow.

KING, Tp.—Owns and operates telephone system, cost $9,500. Number of buildings erected, 16; cost $1,250. Amount expended on permanent improvements, $8,324. Amount expended on sanitation, $150. J. L. Jenkins, Township Clerk, King.

KINGSTON, C.—Smelting and refining works started. Owns and operates waterworks, value $339,708; gas plant, value, $202,421; electric light plant, value $221,451. Good opening for industries of any character. Number of buildings erected, 109; cost $530,600. Amount expended on permanent improvements, $16,853. Amount expended on sanitation, $5,183.84. W. W. Sands, City Clerk, Kingston.

KINGSTON, Tp.—Creamery started. Number of buildings erected, 4; cost $8,000. Amount expended on permanent improvements, $1,200. C. F. Adair, Township Clerk, Cataraqui.

KINGSVILLE, Tn.—Stove factory started. Owns and operates waterworks, cost $33,000. Own natural gas lines through town, leased at $1,000 a year. Good opening for industries of any character. Number of buildings erected, 6; cost

$9,000. Amount expended on permanent improvements, $8,000. Amount expended on sanitation, $100. G. Pearse, Town Clerk, Kingsville.

KINLOSS, Tp.—No new buildings erected. Amount expended on permanent improvements, $2,961. Thomas Murray, Township Clerk, Langside.

KITLEY, Tp.—Good opening for canning factory. Number of buildings erected, 5; cost $5,000. Amount expended on permanent improvements $3,854.80. J. M. Edgar, Township Clerk, Toledo.

KORAH AND PARKE, Tps.—Opening for box factory, chair factory, cheese factory. Number of buildings erected, 8; cost $13,100. Amount expended on permanent improvements, $6,500. Amount expended on sanitation, $12. R. M. Moore, Township Clerk, Korah.

LAIRD, Tp.—Owns and operates municipal telephone, cost $6,000. Good opening for brick and tile factory. Amount expended on permanent improvements, $1,500. F. H. Schoales, Township Clerk, Laird.

LAKE, Tp.—See Marmora and Lake Tps.

LAKEFIELD, V.—Good opening for woodworking factory, hardwood flooring factory, Portland cement works. Number of buildings erected, 2; cost $2,000. Amount expended on permanent improvements, $2,057. W. Sherin, Village Clerk, Lakefield.

LANARK, Tp.—Amount expended on permanent improvements, $742.58. A. Rankin, Township Clerk, Middleville.

LANARK, V.—Woollen mills started. One new building erected, cost $5,000. Amount expended on permanent improvements, $1,399. R. Beatty, Village Clerk, Lanark.

LANCASTER, Tp.—Number of buildings erected, 13; cost $18,300. Amount expended on permanent improvements, $4,800. A. J. McDonald, Township Clerk, North Lancaster.

LANCASTER, V.—Good opening for foundry or manufacturing industry. No new buildings erected. Amount expended on permanent improvements, $300. J. McL. Sutherland, Village Clerk, Lancaster.

LANSDOWNE, FRONT, Tp.—See Leeds and Lansdowne Front Tps.

LATCHFORD, Tn.—Good opening for pulp mill, saw mill, or any industries requiring power. No new buildings erected. Amount expended on permanent improvements, $10. S. A. Starling, Town Clerk, Latchford.

LAVALLEE, Tp.—Good opening for grist mill. Amount expended on permanent improvements, $4,855. A. Cooke, Township Clerk, Devlin.

LAVANT, Tp.—No new buildings erected. Amount expended on permanent improvements, $100. W. Browning, Township Clerk, Lavant Station.

LAXTON, DIGBY AND LONGFORD, Tps.—Three saw mills started. Good opening for butter and cheese factory. Number of buildings erected, cost $5,000. Amount expended on permanent improvements, $1,200. E. F. LeCraw, Township Clerk, Norland.

LEAMINGTON, Tn.—Owns and operates waterworks, cost $27,500; gas plant, cost $25,000. Good opening for any kind of industry. Number of buildings erected, 75; cost $152,000. Amount expended on permanent improvements, $11,447. Amount expended on sanitation, $84.70. R. M. Selkirk, Town Clerk, Leamington.

LEEDS AND LANSDOWNE FRONT, Tps.—Good opening for automobile and carriage factory. Number of buildings erected, 15; cost $27,500. Amount ex-

pended on permanent improvements, $7,862. Amount expended on sanitation, $30. J. D. W. Darling, Township Clerk, Lansdowne.

Leeds and Lansdowne, Rear, Tps.—Number of buildings erected, 8; cost $8,000. Amount expended on permanent improvements, $1,919. R. J. Green, Township Clerk, Soperton.

Limerick, Tp.—No new buildings erected. Amount expended on permanent improvements, $2,847. J. W. Ham, Township Clerk, St. Ola.

Lindsay, Tp.—Number of buildings erected, 5; cost $2,800. Amount expended on permanent improvements, $2,025. P. A. Currie, Township Clerk, Cape Chin.

Listowel, Tn.—Owns and operates waterworks, cost $29,000; electric light plant, cost $16,000. Good opening for condensed milk factory. Number of buildings erected, 2; cost $4,000. Amount expended on permanent improvements, $2,700. Amount expended on sanitation, $365.55. Wm. Bright, Town Clerk, Listowel.

Little Current, Tn.—Good opening for sash and door factory, foundry, grist mill, boat repair plant. Number of buildings erected, 6; cost $7,000. Amount expended on permanent improvements, $2,500. D. McGilvery, Town Clerk, Little Current.

Lobo, Tp.—Cement and tile yard, fox and mink ranch, and skunk farm started. Number of buildings erected, 17; cost $25,000. Amount expended on permanent improvements, $6,465. Amount expended on sanitation, $42. E. R. Barclay, Township Clerk, Poplar Hill.

Lochiel, Tp.—Amount expended on permanent improvements, $16,000. V. G. Chisholm, Township Clerk, Lochiel.

Logan, Tp.—No new buildings erected. Amount expended on permanent improvements, $7,229. Amount expended on sanitation, $25. M. Leake, Township Clerk, Mitchell.

London, C.—Portable granary factory, shoe factory, brush factory, vinegar factory, structural steel factory, gum factory started. Owns and operates waterworks, cost $1,135,528; lighting system, cost $470,073. Good opening for industries of any character. Number of buildings erected, 1,179; cost $1,136,108. Amount expended on permanent improvements, $38,380. Amount expended on sanitation, $23,367. S. Baker, City Clerk, London.

London, Tp.—Cereal food industry started. Good opening for industries of any character. Number of buildings erected, 200; cost $255,000. Amount expended on permanent improvements, $37,000. Amount expended on sanitation, $400. Mary Grant, Township Clerk, 110 Dundas Street, London.

Longford, Tp.—See Laxton, Digby and Longford Tps.

Longueuil, Tp.—Good opening for cement works. Number of buildings erected, 10; cost $13,000. Amount expended on permanent improvements, $500. Amount expended on sanitation, $100. E. Carriere, Township Clerk, Ritchance.

L'Orignal, Tp.—Amount expended on permanent improvements, $500. Colin E. O'Brian, Township Clerk, L'Orignal.

Loughborough, Tp.—Good opening for brick yard. No new buildings erected. Amount expended on permanent improvements, $3,000. F. M. Lawson, Township Clerk, Sydenham.

Lucan, V.—Owns and operates electric light plant, cost $5,000. Good openings for various industries. Number of buildings erected, 3; cost $2,000. Amount

expended on permanent improvements, $1,500. Geo. A. Stanley, Village Clerk, Lucan.

Lucknow, V.—Owns and operates waterworks for fire protection, cost $10,000. Openings for condensed milk factory, clothing factory, knitting factory, furniture factory. No new buildings erected. Amount expended on permanent improvements, $4,000. Joseph Agnew, Village Clerk, Lucknow.

Luther, E., Tp.—Good openings for various industries. Number of buildings erected, 2; cost $2,400. Amount expended on permanent improvements, $12,000. Amount expended on sanitation, $90. J. A. Richardson, Township Clerk, Grand Valley.

Luther, W., Tp.—Number of buildings erected, 5; cost $7,500. Amount expended on permanent improvements, $2,951. Amount expended on sanitation, $39.75. W. W. Duncan, Township Clerk, Conn.

Lutterworth, Tp.—Good opening for cheese factory or creamery. Number of buildings erected, 6; cost $6,000. Amount expended on permanent improvements, $400. J. H. Hulbig, Township Clerk, Minden.

Lynedoch, Tp.—See Brudenell and Lynedoch Tps.

McDougall, Tp.—Explosives factory started. Good openings for various industries. One new building erected, cost $750,000. Amount expended on permanent improvements, $1,500. J. E. Armstrong, Township Clerk, Parry Sound.

McGillivray, Tp.—Number of buildings erected, 25; cost $40,000. Amount expended on permanent improvements, $3,500. Amount expended on sanitation, $50. J. D. Drummond, Township Clerk, Brinsley.

McIrvine, Tp.—Good openings for saw mill, pulp and paper mills, furniture and woodenware factories, flour mills, plaster board factory, and reduction works. Number of buildings erected, 7; cost $4,000. Amount expended on permanent improvements, $3,000. Frank J. Strain, Township Clerk, Fort Frances.

McKellar, Tp.—Good opening for woollen mill. Number of buildings erected 5; cost $2,200. Amount expended on permanent improvements, $251. Amount expended on sanitation, $3. J. Fletcher, Township Clerk, McKellar.

McKillop, Tp.—Owns and operates telephone system, cost $19,202. Number of buildings erected, 6; cost $8,000. Amount expended on permanent improvements, $2,540. Amount expended on sanitation, $106. M. Murdie, Township Clerk, Winthrop.

McKim, Tp.—Number of buildings erected, 12; cost $6,000. Amount expended on permanent improvements, $3,106. Amount expended on sanitation, $70. J. R. Vincent, Township Clerk, Box 322, Sudbury.

McLean and Ridout, Tps.—Amount expended on permanent improvements, $1,700. W. H. Brown, Township Clerk, Baysville.

McMurrich, Tp.—Good opening for basket factory. One new building erected, cost $700. Amount expended on permanent improvements, $850. D. C. McFarlane, Township Clerk, Sprucedale.

McNab, Tp.—Number of buildings erected, 12; cost $6,000. Amount expended on permanent improvements, $4,000. John McGregor, Township Clerk, Renfrew.

Macaulay, Tp.—Number of buildings erected, 3; cost $300. Amount expended on permanent improvements, $. Alexander Barron Township Clerk, Bracebridge.

Macdonald, Meredith and Aberdeen, Tps.—Owns and operates telephone system, cost $2,400. Number of buildings erected, 13; cost $7,000. Amount

expended on permanent improvements, $2,500. Amount expended on sanitation, $40. W. L. Cherry, Township Clerk, Sylvan Valley.

MACHAR, Tp.—Number of buildings erected, 2; cost $1,500. Amount expended on permanent improvements, $246. John E. Smyth, Township Clerk, Midford.

MACHIN, Tp.—Good opening for pulp mill, furniture factory, grist mill, sash and door factory, saw mill. W. W. Howell, Township Clerk, Minnitaki.

MADOC, Tp.—Iron mine and talc mine started. Number of buildings erected, 25; cost $25,000. Amount expended on permanent improvements, $11,000. William T. Allen, Township Clerk, Cooper.

MADOC, V.—Owns and operates electric light plant, cost $18,000. Good opening for canning factory, foundry, condensed milk factory, pork packing, saw mill, furniture factory, and talc industries. Number of buildings erected, 4; cost $12,000. Amount expended on permanent improvements, $1,620. Amount expended on sanitation, $52. W. J. Hill, Village Clerk, Madoc.

MAIDSTONE, Tp.—Owns and operates telephone system, cost $12,130. Good opening for canning factory. Number of buildings erected, 100; cost $2,125. Amount expended on sanitation, $196. W. R. Phillips, Township Clerk, Maidstone.

MALAHIDE, Tp.—Good opening for flour mill. No new buildings erected. Amount expended on permanent improvements, $8,000. Amount expended on sanitation, $8. M. E. Lyon, Township Clerk, Aylmer.

MALDEN, Tp.—Number of buildings erected, 18; cost $171,400. Amount expended on permanent improvements, $2,225. E. H. Bratt, Township Clerk, Malden Centre.

MANVERS, Tp.—Number of buildings erected, 11; cost $13,300. Amount expended on permanent improvements, $2,092. Amount expended on sanitation, $54. J. J. Preston, Township Clerk, Bethany.

MARA, Tp.—Good opening for planing mill, stave factory, and other small factories of any kind. Number of buildings erected, 2; cost $——. Amount expended on permanent improvements, $600. W. R. McPhee, Township Clerk, Brechin.

MARIA, Tp.—See Head, Maria and Clara Tps.

MARCH, Tp.—Good opening for carriage factory. Number of buildings erected, 2; cost $4,000. Amount expended on permanent improvements, $587. Amount expended on sanitation, $85. T. Richardson, Township Clerk, South March.

MARIPOSA, Tp.—Number of buildings erected, 4; cost $24,700. Amount expended on permanent improvements, $10,051. J. B. Weldon, Township Clerk, Oakwood.

MARKDALE, V.—Good opening for machine shop, foundry. Owns and operates waterworks, cost $30,000. Amount expended on permanent improvements, $100. Amount expended on sanitation, $75. W. J. Shortell, Village Clerk, Markdale.

MARKHAM, Tp.—Amount expended on permanent improvements, $7,580. C. H. Stiver, Township Clerk, Unionville.

MARKHAM, V.—Owns and operates waterworks and electric light plant, cost $15,000. Good opening for foundry and machine shop, knitting factory. Number of buildings erected, 6; cost $5,000. Amount expended on permanent improvements, $3,500. M. White, Village Clerk, Markham.

Marlborough, Tp.—Number of buildings erected, 5; cost $4,000. Amount expended on permanent improvements, $400. Edward Mills, Township Clerk, Malakoff.

Marmora and Lake, Tps.—Good opening for mining. Number of buildings erected, 5; cost $6,000. Amount expended on permanent improvements, $1,380. T. E. Laycock, Township Clerk, Deloro.

Marmora, V.—Owns and operates electric light plant, cost $6,000. Good opening for any kind of woodworking industry. Number of buildings erected, 4; cost $6,000. Amount expended on permanent improvements, $300. H. W. Sabine, Village Clerk, Marmora.

Martland, Tp.—Good opening for industries requiring hardwood. Number of buildings erected, 6; cost $2,800. Amount expended on permanent improvements, $800. J. Guerin, Township Clerk, Noelville.

Maryborough, Tp.—Good opening for furniture factory. No new buildings erected. Amount expended on permanent improvements, $3,286. Amount expended on sanitation, $66. W. W. Scott, Township Clerk, Moorefield.

Marysburgh, N., Tp.—Good opening for canning industries. Number of buildings erected, 7; cost $10,000. Amount expended on permanent improvements, $1,000. Amount expended on sanitation, $30. L. Williams, Township Clerk, Picton.

Marysburgh, S., Tp.—Canning factory started. Good opening for packing house for handling apples. Number of buildings erected, 15; cost $10,000. Amount expended on permanent improvements, $2,000. H. F. Grimmon, Township Clerk, Milford.

Massey, Tn.—Owns and operates waterworks, cost $22,901. Good opening for furniture factory and woollen mill. Number of buildings erected, 7; cost $7,600. Amount expended on permanent improvements, $5,571. D. W. Cantlon, Town Clerk, Massey Station.

Matawatchan, Tp.—See Griffith and Matawatchan Tps.

Matchedash, Tp.—Good opening for blacksmith and general repair shop. No new buildings erected. Amount expended on permanent improvements, $4,000. E. W. Kitchen, Township Clerk, Lovering.

Matheson, Tn.—Good opening for flour and feed, brick yard, baker, harness maker, blacksmith and farrier, and other stores suitable to a farming community. Number of buildings erected, 9; cost $1,625. Amount expended on permanent improvements, $108. F. E. Ginn, Town Clerk, Matheson.

Matilda, Tp.—Number of buildings erected, 5; cost $10,000. Amount expended on permanent improvements, $3,051. J. J. Page, Township Clerk, Brinston.

Mattawa, Tn.—Good opening for saw mill, planing mill, cabinet factory. Number of buildings erected, 2; cost $40,000. Amount expended on permanent improvements, $5,616. J. McMeekin, Town Clerk, Mattawa.

Mattawan, Tp.—Good opening for pulp mill. Number of buildings erected, 6; cost $800. Amount expended on permanent improvements, $600. H. F. McMinn, Township Clerk, Mattawa.

Maxville, V.—Good openings for canning factory, sash and door factory, grist mill. Number of buildings erected, 2; cost $2,000. Amount expended on permanent improvements, $600. D. P. McDiarmid, Village Clerk, Maxville.

May, Tp.—See Salter, May and Harrow Tps.

Mayo, Tp.—No new buildings erected. Amount expended on permanent improvements, $360. J. Douglas, Township Clerk, Rowland.

Meaford, Tn.—Woollen factory started. Owns and operates waterworks, cost $35,000. Good opening for woodworking factories, brick yard. Number of buildings erected, 60; cost $80,000. Amount expended on permanent improvements, $15,000. Amount expended on sanitation, $3,000. Geo. G. Albery, Town Clerk, Meaford.

Medonte, Tp.—Owns and operates telephone system, value $20,000. Good opening for cheese factory, creamery, lumber and shingle mills. Number of buildings erected, 20; cost $12,000. Amount expended on permanent improvements, $5,000. T. D. Robinson, Township Clerk, Moonstone.

Medora and Wood, Tps.—Number of buildings erected, 4; cost $4,000. Amount expended on permanent improvements, $4,865. Amount expended on sanitation, $59. H. C. Guy, Township Clerk, Dudley.

Melancthon, Tp.—Number of buildings erected, 18; cost $25,000. Amount expended on permanent improvements, $8,000. Amount expended on sanitation, $25. T. K. Slack, Township Clerk, Melancthon.

Merrickville, V.—Woollen mills started. Good opening for various industries. One new building erected, cost $2,000. Amount expended on permanent improvements, $3,000. Amount expended on sanitation, $500. D. J. Hall, Village Clerk, Merrickville.

Merritton, V.—Oil tanks for auto lighting, box factory, tissue paper factory, power house for paper factory started. Owns and operates waterworks, cost $70,000; electric light plant, cost $10,000. Number of buildings erected, 28; cost $10,000. Amount expended on permanent improvements, $2,000. Amount expended on sanitation, $1,000. R. Clark, Village Clerk, Merritton.

Mersea, Tp.—Good opening for canning factory. Number of buildings erected, 30; cost $25,000. Amount expended on permanent improvements, $5,600. A. Hairsine, Township Clerk, Leamington.

Metcalfe, Tp.—Number of buildings erected, 2; cost $1,200. Amount expended on permanent improvements, $4,909. Amount expended on sanitation, $52. Richard Ward, Township Clerk, Strathroy.

Methuen, Tp.—See Belmont and Methuen Tps.

Middleton, Tp.—Amount expended on permanent improvements, $4,000. D. W. White, Township Clerk, Courtland.

Midland, Tn.—Planing mill, whitewear factory, dry dock started. Owns and operates waterworks, cost $97,000; electric light plant, cost $55,000. Good opening for industries in iron and wood. Number of buildings erected, 61; cost $197,000. Amount expended on permanent improvements, $15,000. Amount expended on sanitation, $14,000. F. H. Weston, Town Clerk, Midland.

Millbrook, V.—Good opening for canning factory, furniture factory, evaporator. Number of buildings erected, 2; cost $15,000. Amount expended on permanent improvements, $1,500. Amount expended on sanitation, $100. W. S. Given, Village Clerk, Millbrook.

Miller, Tp.—See Clarendon and Miller Tps.

Milverton, V.—Furniture factory started. Good opening for creamery, cheese and butter factory, woollen mill. Number of buildings erected, 5; cost $18,300. Amount expended on permanent improvements, $3,000. Amount expended on sanitation, $40. W. D. Weir, Village Clerk, Milverton.

Mimico, V.—Owns and operates hydro-electric system, value $20,000. Good

openings for various industries. Number of buildings erected, 12; value $30,000. Amount expended on permanent improvements, $4,500. A. Jackson, Village Clerk, Mimico.

Minden, Tp.—Number of buildings erected, 3; cost $1,800. Amount expended on permanent improvements, $644. Edgar A. Rogers, Township Clerk, Minden.

Minto, Tp.—Number of buildings erected, 1; cost $2,000. Amount expended on permanent improvements, $4,000. W. D. McLellan, Township Clerk, Harriston.

Mitchell, Tn.—Owns and operates waterworks and electric light plant, cost $39,000. Number of buildings erected, 5; cost $12,500. A. D. Cameron, Town Clerk, Mitchell.

Monaghan, N., Tp.—Good openings for various industries. Number of buildings erected, 37; cost $50,000. Amount expended on permanent improvements, $1,700. B. Johnston, Township Clerk, Peterborough.

Monaghan, S., Tp.—Number of buildings erected, 2; cost $2,500. Amount expended on permanent improvements, $1,318. J. A. Porter, Township Clerk, South Monaghan.

Monck, Tp.—Amount expended on permanent improvements, $2,280. Amount expended on sanitation, $3. H. F. Bickmore, Township Clerk, Alport.

Monmouth, Tp.—One new building erected, cost $1,000. Amount expended on permanent improvements, $71. J. Moore, Township Clerk, Wilberforce.

Mono, Tp.—Number of buildings erected, 6; cost $1,200. Amount expended on permanent improvements, $10,000. Amount expended on sanitation, $60. W. A. Henry, Township Clerk, Mono Centre.

Montague, Tp.—Number of buildings erected, 10; cost $8,000. Amount expended on permanent improvements, $2,000. J. E. Edmunds, Township Clerk, Smith's Falls.

Monteagle and Herschel, Tps.—Graphite mines started. Good opening for furniture factory. Amount expended on permanent improvements, $2,600. Amount expended on sanitation, $200. G. A. Jordison, Township Clerk, Maynooth.

Moore, Tp.—Salt works started. Owns and operates telephone system, cost $32,000. Good opening for brick and tile yard. Number of buildings erected, 4; cost $5,000. Amount expended on permanent improvements, $8,000. C. C. Watson, Township Clerk, Brigden.

Morley, Tp.—Good opening for woodworking industries. Number of buildings erected, 20; cost $15,000. Amount expended on permanent improvements, $3,600. G. G. Gamsby, Township Clerk, Stratton Station.

Mornington, Tp.—Good opening for condensed milk factory. Number of buildings erected, 7; cost $10,000. Amount expended on permanent improvements, $7,380. William Waddell, Township Clerk, Burns.

Morris, Tp.—Owns and operates telephone system, cost $31,558. No new buildings erected. Amount expended on permanent improvements, $10,600. Amount expended on sanitation, $26. A. MacEwen, Township Clerk, Bluevale.

Morrisburg, V.—Owns and operates waterworks, cost $35,000; electric light plant, cost $30,000. No new buildings erected. F. R. Chalmers, Village Clerk, Morrisburg.

Morrison, Tp.—Number of buildings erected, 10; cost $4,425. Amount expended on permanent improvements, $517. J. T. Bayley, Township Clerk, Severn Bridge.

Mosa, Tp.—Opening for brick and tile yard. Amount expended on permanent improvements, $3,939. Amount expended on sanitation, $11. C. C. McNaughton, Township Clerk, Newbury.

Moulton, Tp.—Number of buildings erected, 6; cost $7,000. Amount expended on permanent improvements, $500. W. M. Allen, Township Clerk, Moulton.

Mount Forest, Tn.—Owns and operates waterworks and electric light plant, cost $50,000. Good opening for furniture factory. No new buildings erected. Amount expended on permanent improvements, $500. Amount expended on sanitation, $150. W. C. Perry, Town Clerk, Mount Forest.

Mountain, Tp.—Number of buildings erected, 4; cost $6,000. Amount expended on permanent improvements, $6,077. J. E. Crowder, Township Clerk, Inkerman.

Mulmur, Tp.—Light and power plant started. Amount expended on permanent improvements, $3,565. Amount expended on sanitation, $178.50. Geo. Laking, Township Clerk, Shelburne.

Murray, Tp.—No new buildings erected. Amount expended on permanent improvements, $2,680. Amount expended on sanitation, $210. W. Little, Township Clerk, Wooler.

Muskoka, Tp.—One new building erected, cost $2,000. Amount expended on permanent improvements, $1,082. J. Brydon, Township Clerk, Gravenhurst.

Nairn and Lorne, Tps.—No new buildings erected. Amount expended on permanent improvements, $264. Amount expended on sanitation, $10. H. Edwards, Township Clerk, Nairn Centre.

Napanee, Tn.—Good opening for industries of any character. One new building erected, cost $20,000. Amount expended on permanent improvements, $4,000. Amount expended on sanitation, $40,000. W. A. Grange, Town Clerk, Napanee.

Nassagaweya, Tp.—Opening for brick and lime factory. Number of buildings erected, 4; cost $4,000. Amount expended on permanent improvements, $8,000. J. Marshall, Township Clerk, Campbellville.

Neebing, Tp.—Stone quarry started. Good openings for industries of any character. Number of buildings erected, ; cost $. Amount expended on permanent improvements, $3,000. W. M. Rae, Township Clerk, Fort William.

Neelon and Garson, Tps.—Number of buildings erected, 20; cost $12,000. Amount expended on permanent improvements, $2,621. Amount expended on sanitation, $62. J. R. Vincent, Township Clerk, Box 322, Sudbury.

Nelson, Tp.—Number of buildings erected, 10; cost $14,000. Amount expended on permanent improvements, $7,000. J. F. Richardson, Township Clerk, Milton.

Nepean, Tp.—Good opening for industries of any character. Number of buildings erected, 150; cost $175,000. Amount expended on permanent improvements, $8,838. Amount expended on sanitation, $1,114. John Gamble, Township Clerk, Westboro.

Nepigon, Tp.—Owns and operates waterworks, cost $3,000. Good opening for pulp mill. Number of buildings erected, 2; cost $2,036. Amount expended on permanent improvements, $1,074. P. F. Bull, Township Clerk, Box 33, Nepigon.

NEUSTADT, V.—No new buildings erected. Amount expended on permanent improvements, $883. R. W. Walden, Village Clerk, Neustadt.

NEW HAMBURG, V.—Silverware factory started. Owns and operates electric light plant; cost $25,000. Good openings for interior hardwood factory, furniture factory, boot and shoe factory. Number of buildings erected, 20; cost $38,500. Amount expended on permanent improvements, $6,011. J. F. Ketzerman, Village Clerk, New Hamburgh.

NEW LISKEARD, Tn.—Iron works and marble works started. Owns and operates waterworks, value $86,193. Good opening for paper and pulp mill, furniture factory, stove factory, brick and tile yard, cement works, grist mill. Number of buildings erected, 12; cost $12,000. Amount expended on permanent improvements, $6,986. Amount expended on sanitation, $8,490. J. I. Dixon, Town Clerk, New Liskeard.

NEWBORO, V.—Opening for canning factory. No new buildings erected. Amount expended on permanent improvemnets, $200. Amount expended on sanitation, $10. W. S. Bilton, Village Clerk, Newboro.

NEWBURGH, V.—Good opening for canning factory, knitting factory, stove and agricultural works. Number of buildings erected, 2; cost $2,000. Amount expended on permanent improvements, $1,844. C. Welbanks, Village Clerk, Newburgh.

NEWBURY, V.—Pickle factory started. Owns and operates street lighting, cost $2,500. Good opening for canning factory, harness maker. Number of buildings erected, 2; cost $2,150. C. Tucker, Village Clerk, Newbury.

NEWCASTLE, V.—Good opening for canning factory, cooperage, automobile repair shop. Number of buildings erected, 2; cost $3,000. Amount expended on permanent improvements, $1,000. Amount expended on sanitation, $100. G. Jamieson, Village Clerk, Box 37, Newcastle.

NEWMARKET, Tn.—Owns and operates waterworks and electric light plant, cost $42,000. Good opening for sash and door factory, boot and shoe factory, etc. Number of buildings erected, 51; cost $135,000. Amount expended on permanent improvements, $8,160. J. E. Hughes, Town Clerk, Newmarket.

NIAGARA, Tn.—Owns and operates waterworks, value $36,000; electric light plant, value $25,000. Good opening for basket factory. Number of buildings erected, 9; cost $50,100. Amount expended on permanent improvements, $1,668. Amount expended on sanitation, $472. W. E. Lyall, Town Clerk, Niagara.

NIAGARA, Tp.—Canning factory started. Good opening for canning factory. Number of buildings erected, 15; cost $40,000. Amount expended on permanent improvements, $2,600. J. Knox, Township Clerk, Virgil.

NIAGARA FALLS, C.—Wholesale seeds, hoists, derricks and saws, acetylene generators, paper bags, sweaters, etc., industries started. Owns and operates waterworks, value $220,000; electric light plant, value $140,000. Good opening for industries using electric power. Number of buildings erected, 156; cost $432,935. Amount expended on permanent improvements, $25,000. Amount expended on sanitation, $19,836. W. J. Seymour, City Clerk, Niagara Falls.

NICHOL, Tp.—Number of buildings erected, 2; cost $1,000. Amount expended on permanent improvements, $3,511. Amount expended on sanitation, $50. J. R. Wissler, Township Clerk, Salem.

NIGHTINGALE, Tp.—See Sherbourne, etc., Tps.

NIPISSING, Tp.—Good opening for various industries. One new building

erected, cost $1,000. Amount expended on permanent improvements, $700. Amount expended on sanitation, $50. W. S. Rowson, Township Clerk, Nipissing.

Nissouri E., Tp.—Number of buildings erected, 6; cost $5,000. Amount expended on permanent improvements, $1,312. Amount expended on sanitation, $67. J. W. Sutherland, Township Clerk, Medina.

Nissouri W., Tp.—Number of buildings erected, 7; cost $12,000. Amount expended on permanent improvements, $4,000. Amount expended on sanitation, $100. J. H. Davis, Township Clerk, Belton.

Normanby, Tp.—Amount expended on permanent improvements, $15,000. R. H. Fortune, Township Clerk, Ayton.

North Bay, Tn.—Owns and operates waterworks, cost $186,923. Good openings for industries of any character. Number of buildings erected, 164; cost $462,675. Amount expended on permanent improvements, $70,759. Amount expended on sanitation, $38,162. T. N. Colgan, Town Clerk, Box 102, North Bay.

Norwich, V.—Flour mills started. Owns and operates electric light and power plant, cost $14,000. Good opening for canning factory. Number of buildings erected, 5; cost $24,000. Amount expended on permanent improvements, $28,000. Amount expended on sanitation, $1,800. W. Fairley, Village Clerk, Norwich.

Norwich N., Tp.—Good opening for evaporator. Number of buildings erected, 6; cost $6,000. Amount expended on permanent improvements, $3,522. Amount expended on sanitation, $72. C. E. Burgess, Township Clerk, Burgessville.

Norwich, S., Tp.—Good opening for industries of any character. Number of buildings erected, 3; cost $3,000. Amount expended on permanent improvements, $4,279. A McFarlane, Township Clerk, Otterville.

Norwood, V.—Branch bank started. Good opening for canning factory and cheese box factory. Number of buildings erected, 3; cost $12,000. Amount expended on permanent improvements, $600. E. J. Laing, Village Clerk, Norwood.

Nottawasaga, Tp.—Number of buildings erected, 2; cost $1,000. Amount expended on permanent improvements, $5,429. Amount expended on sanitation. $50. L. McAlister, Township Clerk, Duntroon .

Oakland, Tp.—Good opening for creamery. Number of buildings erected, 10; cost $5,000. Amount expended on permanent improvements, $3,000. P. M. Button, Township Clerk, Scotland

Oakley, Tp.—Good opening for various industries. No new buildings erected. Amount expended on permanent improvements, $370. H. J. Johnston, Township Clerk, Vancoughnet.

Oakville, Tn.—Aluminum factory started. Owns and operates waterworks, cost $72,000; electric light plant, cost $18,000. Number of buildings erected, 45; cost $60,000. Amount expended on permanent improvements, $3,656. Amount expended on sanitation, $59,900. W. S. Savage, Town Clerk, Oakville.

O'Conner, Tp.—Good opening for cheese factory. One new building erected, cost $700. Amount expended on permanent improvements, $728. C. J. Evans, Township Clerk, O'Connor.

Oil Springs, V.—Good opening for industries of any character. Amount expended on permanent improvements, $708. D. P. Sisk, Village Clerk, Oil Springs.

Olden, Tp.—Creamery started. Good openings for lumber dressing plant,

sash and door factory, woodworking factory, etc. Number of buildings erected, 10; cost $4,000. Amount expended on permanent improvements, $1,800. Amount expended on sanitation, $100. W. P. Bender, Township Clerk, Long Lake.

Oliver, Tp.—Owns and operates telephone system, cost $8,000. Number of buildings erected, 7; cost $15,000. Amount expended on permanent improvements, $4,410. Amount expended on sanitation, $58. C. R. B. Hill, Township Clerk, Murille.

Omemee, V.—One new building erected, cost $1,500. Amount expended on permanent improvements, $454. W. H. Kennedy, Village Clerk, Omemee.

Oneida, Tp.—Good opening for brick yard. Number of buildings erected, 20; cost $30,000. Amount expended on permanent improvements, $857. Amount expended on sanitation, $52. J. Senn, Township Clerk, York.

Onondaga, Tp.—Good opening for tile yard. Number of buildings erected, 5; cost $5,000. Amount expended on permanent improvements, $4,000. A Burrill, Township Clerk, Onondaga.

Ops, Tp.—Good openings for industries of varies character. Number of buildings erected, 6; cost $10,000. Amount expended on permanent improvements, $4,761. Amount expended on sanitation, $44. W. E. Agnew, Township Clerk, Lindsay.

Orangeville, Tn.—Owns and operates waterworks, cost $52,484. Good opening for factories of any character. One new building erected, cost $1,300. Amount expended on permanent improvements, $981. Amount expended on sanitation, $20. A. A. Hughson, Town Clerk, Orangeville.

Orford, Tp.—Canning factory started. Good opening for pickle factory, foundry. Number of buildings erected, 10; cost $21,000. Amount expended on permanent improvements, $2,530. Amount expended on sanitation, $237. F. Littlejohn, Township Clerk, Highgate.

Orillia, Tp.—Good opening for brick and tile yard. Number of buildings erected, 20; cost $20,000. Amount expended on permanent improvements, $3,125. John C. Rose, Township Clerk, Orillia.

Oro, Tp.—Number of buildings erected, 3; cost $6,000. Amount expended on permanent improvements, $2,205. H. J. Tudhope, Township Clerk, Hawkestone.

Oshawa, Tn.—Textile factory started. Owns and operates waterworks, cost $153,268. Good opening for any wood or iron working machinery, shoe factory, harness factory, machine shop and general repairs. Number of buildings erected, 160; cost $300,000. Amount expended on permanent improvements, $76,000. Amount expended on sanitation, $14,000. Thos. Morris, Town Clerk, Oshawa.

Osgoode, Tp.—Number of buildings erected, 20; cost $. Amount expended on permanent improvements, $7,435. F. Iveson, Township Clerk, Metcalfe.

Osnabruck, Tp.—Good opening for canning factory, peat works. Number of buildings erected, 50; cost $25,000. Amount expended on permanent improvements, $3,000. Amount expended on sanitation, $36. H. E. Hodgins, Township Clerk, Farran's Point.

Oso, Tp.—Good opening for boot and shoe factory, canning factory. Number of buildings erected, 6; cost $5,000. Amount expended on permanent improvements, $2,000. Bertram Smith, Township Clerk, Sharbot Lake.

Osprey, Tp.—Number of buildings erected, 18; cost $8,000. Amount ex-

pended on permanent improvements, $3,226. Amount expended on sanitation, $46. Thos. Scott, Township Clerk, McIntyre.

Otonabee, Tp.—Number of buildings erected, 8; cost $8,000. Amount expended on permanent improvements, $3,692. Amount expended on sanitation, $55. J. H. Drummond, Township Clerk, Peterboro.

Ottawa, C.—Aluminum, brass and bronze castings, wallboard, beaver board, wire cloth and paper mill accessories, engines, boilers, bridges, steel and iron pipe, hydraulic equipment, sanitary floors, roofing, etc., Grey iron castings, printing, bookbinding, loose leaf system, structural steel, sash, doors, finishing, lumber, cut glass, artificial ice started. Owns and operates waterworks, value $3,000,000; electric light and power plant, value $425,484. Good opening for automobiles, boxes, bags, biscuits, barrels, bottles, clothing, cigars, confections, cereal foods, elevators and mill building machinery, and materials, furniture, flour, gloves, oatmeal, paper, paperwares, and kindred products, pottery, roller mill products, rubber and felt goods, shirts and collars, shoes, steel castings, tiles, textiles, woodenwares, etc. Number of buildings erected, 627; cost $3,621,850. Amount expended on permanent improvements, $686,910. Amount expended on sanitation, $296,494. J. Henderson, City Clerk, Ottawa.

Owen Sound, Tn.—Bolt and screw factory, wire and nail factory, malleable iron foundry, match factory started. Owns and operates waterworks, value $359,326; gas plant, value $156,142; electric light and power, value $206,763. Good opening for any kind of industries. Number of buildings erected, 164; cost $296,017. Amount expended on permanent improvements, $19,869. Amount expended on sanitation, $8,496. C. Gordon, Town Clerk, Owen Sound.

Oxford on Rideau, Tp.—Number of buildings erected, 4; cost $4,000. Amount expended on permanent improvements, $1,194. C. H. Anderson, Township Clerk, Oxford Mills.

Oxford E., Tp.—Number of buildings erected, 7; cost $12,300. Amount expended on permanent improvements, $5,586. Amount expended on sanitation, $43. F. G. Jackson, Township Clerk, Oxford Centre.

Oxford N., Tp.—Number of buildings erected, 14; cost $10,000. Amount expended on permanent improvements, $2,400. R. Seldon, Township Clerk, Ingersoll.

Oxford W., Tp.—Owns and operates Hydro-Electric light and power plant, cost $3,553. Number of buildings erected, 7; cost $21,200. Amount expended on permanent improvements, $3,000. Amount expended on sanitation, $43. B. C. Jenvey, Township Clerk, Ingersoll.

Paipoonge, Tp.—Brick and tile factory started. Owns and operates telephone system, cost $3,000. Good opening for agricultural implements, creameries, butter factories. Amount expended on permanent improvements, $9,000. Jno. Thornton, Township Clerk, Stanley.

Paisley, V.—Owns and operates waterworks for fire protection, cost $18,000. Good opening for carpet factory. No new buildings erected. Amount expended on permanent improvements, $1,500. Amount expended on sanitation, $315. J. C. Gibson, Village Clerk, Paisley.

Pakenham, Tp.—Opening for industries of any character. Number of buildings erected, 3; cost $4,000. Amount expended on permanent improvements, $600. J. Connery, Township Clerk, Cedar Hill.

Palmerston, Tn.—Trunk factory started. Owns and operates waterworks

and electric light plant, cost $6,400. Good opening for woodworking factory. Number of buildings erected, 10; cost $25,000. Amount expended on permanent improvements, $3,000. Amount expended on sanitation, $500. H. Hyndman, Township Clerk, Palmerston.

Palmerston and North and South Canonto, Tps.—Number of buildings erected, 2; cost $700. Amount expended on permanent improvements, $700. J. Geddes, Township Clerk, McLaren's Depot.

Papineau, Tp.—No new buildings erected. C. A. Fink, Township Clerk, Mattawa.

Paris, Tn.—Owns and operates waterworks, cost $90,000; electric light plant, cost $46,000. Openings for various industries. Number of buildings erected, 20; cost $40,000. Amount expended on permanent improvements, $7,000. Amount expended on sanitation, $700. T. McCosh, Town Clerk, Paris.

Parke, Tp.—See Korah and Parke Tps.

Parkhill, Tn.—Knitting factory started. Good opening for various industries. No new buildings erected. Amount expended on permanent improvements, $1,000. John H. Laughton, Town Clerk, Parkhill.

Parry Sound, Tn.—Smelter started. Owns and operates waterworks, cost $60,000; electric light and power plant, cost $75,000. Good openings for woodworking factory, woollen mills, flour mills, iron works or foundry. Number of buildings erected, 25; cost $50,000. Amount expended on permanent improvements, $2,500. Amount expended on sanitation, $225. E. E. Armstrong, Town Clerk, Parry Sound.

Peel, Tp.—Number of buildings erected, 3; cost $3,500. Amount expended on permanent improvements, $4,000. Amount expended on sanitation, $100. E. Gainer, Township Clerk, Arthur.

Pelee, Tp.—Owns and operates telephone system, cost $6,500. Good opening for canning factory, tobacco factory. Number of buildings erected, 12; cost $10,100. Amount expended on permanent improvements, $1,735. W. Stewart, Township Clerk, Pelee Island.

Pelham, Tp.—Canning factory started. Number of buildings erected, 20; cost $60,000. Amount expended on permanent improvements, $8,595. Amount expended on sanitation, $40. A. N. Armbrust, Township Clerk, Ridgeville.

Pembroke, Tp.—Good opening for woodworking factory, brick and tile yards or moulding shop. Number of buildings erected, 7; cost $4,500. Amount expended on permanent improvements, $129. H. W. Perrett, Township Clerk, Pembroke.

Penetanguishene, Tn.—Boat building factory and planing mill started. Owns and operates waterworks, cost $46,000; electric light and power plant, cost $24,000. Good openings for knitting and woollen mills, felt boots, etc. Number of buildings erected, 10; cost $12,000. Amount expended on permanent improvements, $1,200. Amount expended on sanitation, $1,500. W. H. Hewson, Town Clerk, Penetanguishene.

Percy, Tp.—Openings for tinsmith, plumber and furnace man. Number of buildings erected, 5; cost $10,000. Amount expended on permanent improvements, $3,661. Amount expended on sanitation, $74. P. S. Ewing, Township Clerk, Warkworth.

Perry, Tp.—Good openings for box factory, planing mill or stave factory.

Number of buildings erected, 3; cost $5,000. Amount expended on permanent improvements, $800. F. W. Brooks, Township Clerk, Emsdale.

Perth, Tn.—Carpet factory started. Owns and operates street lighting system, value $14,000. Openings for industries of any character. Amount expended on permanent improvements, $1,500. Amount expended on sanitation, $2,000. J. A. Kerr, Town Clerk, Perth.

Peterborough, C.—Dairy machinery and supply factory started. Owns and operates waterworks, cost $539,920. Openings for industries of any character. Number of buildings erected, 230; cost $465,905. Amount expended on permanent improvements, $13,486. Amount expended on sanitation, $16,749. S. R. Armstrong, City Clerk, Peterborough.

Petewawa, Tp.—Opening for pulp mill. Number of buildings erected, 8; cost $6,000. Amount expended on permanent improvements, $200. E. Giesebraht, Township Clerk, Petewawa.

Petrolea, Tn.—Owns and operates waterworks, cost $190,430. Good opening for planing mill. Number of buildings erected, 6; cost $30,000. Amount expended on permanent improvements, $18,500. Amount expended on sanitation, $2,000. J. McHattie, Town Clerk, Petrolea.

Pickering, Tp.—Good opening for canning factory. Number of buildings erected, 17; cost $28,000. Amount expended on permanent improvements. $14,939. Amount expended on sanitation, $133.18. D. R. Beaton, Township Clerk, Whitevale.

Picton, Tn.—Evaporator started. Owns and operates waterworks, cost $30,000; electric light plant, cost $29,758. Openings for canning factories, evaporators, milk condensing factories. Number of buildings erected, 3; cost $32,000. Amount expended on permanent improvements, $7,424. Amount expended on sanitation, $205. R. H. Hubbs, Town Clerk, Picton.

Pilkinton, Tp.—Number of buildings erected, 4; cost $4,800. Amount expended on permanent improvements, $2,663. C. F. Cromar, Township Clerk, Elora.

Pittsburgh, Tp.—Amount expended on permanent improvements, $4,976. Amount expended on sanitation, $40. W. Murray, Township Clerk, Barriefield.

Plantagenet N., Tp.—Number of buildings erected, 18; cost $25,000. Amount expended on permanent improvements, $2,756. D. A. Viau, Township Clerk, Plantagenet.

Plummer, Additional, Tp.—Trap rock industry started. Good opening for saw mill, brick yard, creamery, quarries. Number of buildings erected, 6; cost $4,000. Amount expended on permanent improvements, $3,000. N. H. Peterson, Township Clerk, Bruce Mines.

Plympton, Tp.—Good opening for blacksmith. Number of buildings erected, 3; cost $3,500. Thos. Nisbet, Township Clerk, Wyoming.

Point Edward, V.—Number of buildings erected, 3; cost . Amount expended on permanent improvements, $2,000. J. F. O'Neil, Village Clerk, Point Edward.

Port Arthur, C.—Waggon works started. Owns and operates street railway, cost $735,000; power plant, cost $393,000; electric light plant, cost $160,000: telephone system, cost $229,500; waterworks cost $873,000. Openings for grain elevator, flour mills and all grain by-products, iron and steel industries and all subsidiary industries and by-products, brick, sewer pipe, etc. Number of build-

ings erected, 300; cost $2,494,179. Amount expended on permanent improvements, $195,316. Amount expended on sanitation, $75,309. T. F. Milne, City Clerk, Port Arthur.

Port Carling, V.—Number of buildings erected, 2; cost $1,000. Amount expended on permanent improvements, $780. Amount expended on sanitation, $108. F. D. Stubbs, Village Clerk, Port Carling.

Port Colborne, V.—Smelting industry, cement works, flour mill started. Owns and operates waterworks, cost $48,000. Splendid opening for iron industries. Number of buildings erected, 15; cost $36,000. Amount expended on permanent improvements, $7,000. Amount expended on sanitation, $500. F. D. Noble, Village Clerk, Port Colborne.

Port Dalhousie, V.—Owns and operates electric light plant, cost $10,000. Good opening for industries of any character. Number of buildings erected, 7; cost $9,000. Amount expended on permanent improvements, $1,194. Amount expended on sanitation, $75. J. M. A. Waugh, Village Clerk, Port Dalhousie.

Port Dover, V.—Openings for canning factory, planing mill, etc. Number of buildings erected, 19; cost $25,000. Amount expended on permanent improvements, $2,300. Amount expended on sanitation, $472. J. Sloan, Village Clerk, Port Dover.

Port Elgin, V.—Owns and operates waterworks, cost $42,000. Good opening for furniture factory, canning factory. No new buildings erected. Amount expended on permanent improvements, $100. D. Geddes, Village Clerk, Port Elgin.

Port Hope, Tn.—Owns and operates waterworks, cost $95,000. Good openings for foundries, factories, etc. Number of buildings erected, 45; cost $135,000. Amount expended on permanent improvements, $7,094. Amount expended on sanitation, $4,805. J. W. Sanders, Town Clerk, Port Hope.

Port Perry, V.—Owns and operates waterworks and electric light plant, cost $23,000. No new buildings erected. Amount expended on permanent improvements, $2,000. W. H. Harris, Village Clerk, Port Perry.

Port Rowan, V.—Owns and operates natural gas lighting plant, cost $200. Good opening for canning factory. No new buildings erected. W. A. Babee, Village Clerk, Port Rowan.

Port Stanley, V.—Owns and operates electric light plant, cost $17,758; waterworks, cost $24,872. Openings for industries of any character. Number of buildings erected, 20; cost $13,000. Amount expended on permanent improvements, $255. Amount expended on sanitation, $23. J. Cough, Village Clerk, Port Stanley.

Portland, Tp.—Sash and door factory started. Openings for tin shop and harrow smith. Number of buildings erected, 9; cost $8,400. Amount expended on permanent improvements, $4,853. Amount expended on sanitation, $55. T. A. Kerr, Township Clerk, Harrowsmith.

Portsmouth, V.—No new buildings erected. Amount expended on permanent improvements, $150. J. W. Henstridge, Village Clerk, Portsmouth.

Powassan, Tn.—Openings for various industries. Number of buildings erected, 3; cost $6,000. Amount expended on permanent improvements, $900. Amount expended on sanitation, $200. L. G. Phillips, Town Clerk, Powassan.

Prescott, Tn.—Owns and operates waterworks, cost $60,000; electric light system, cost $18,000. Openings for industries of any character. Number of

buildings erected, 5; cost $15,000. Amount expended on permanent improvements, $5,000. Amount expended on sanitation, $100. G. Rook, Town Clerk, Prescott.

Preston, Tn.—Iron and brass bed factory started. Owns and operates waterworks, cost $113,019; electric light plant, cost $68,487. Openings for various industries. Number of buildings erected, 120; cost $337,160. Amount expended on permanent improvements, $5,000. Amount expended on sanitation, $4,800. H. C. Edgar, Town Clerk, Preston.

Prince, Tp.—Opening for charcoal plant. No new buildings erected. Amount expended on permanent improvements, $1,387. W. H. Wilson, Township Clerk, Steelton.

Proton, Tp.—Amount expended on permanent improvements, $5,600. T. Laughlin, Township Clerk, Dundalk.

Puslinch, Tp.—Number of buildings erected, 4; cost $6,000. Amount expended on permanent improvements, $1,500. Amount expended on sanitation, $80. A. B. Falconbridge, Township Clerk, Aberfoyle.

Radcliffe, Tp.—Opening for pulp mill. Number of buildings erected, 3; cost $16,150. Amount expended on permanent improvements, $200. J. E. H. Miller, Township Clerk, Combermere.

Raglan, Tp.—General store started. One new building erected, cost $500. Amount expended on permanent improvements, $3,500. C. F. Schmelzle, Township Clerk, Jewellville.

Rainham, Tp.—Number of buildings erected, 5; cost $8,000. Amount expended on permanent improvements, $700. L. F. Culver, Township Clerk, Rainham.

Rainy River, Tn.—Owns and operates waterworks, cost $35,000. Good opening for dentist. Number of buildings erected, 16; cost $48,000. Amount expended on permanent improvements, $722,40. E. E. Jess, Town Clerk, Rainy River.

Raleigh, Tp.—Canning factory started. Opening for tile plant. Number of buildings erected, 20; cost $60,000. Amount expended on permanent improvements, $4,550. Amount expended on sanitation, $225. A. E. Robinson, Township Clerk, Buxton.

Rama, Tp.—Number of buildings erected, 7; cost $8,500. Amount expended on permanent improvements, $300. W. M. Shields, Township Clerk, O'Connell.

Ramsay, Tp.—Number of buildings erected, 4; cost $7,000. Amount expended on permanent improvements, $3,500. T. A. Thompson, Township Clerk, Almonte.

Ratter and Dunnett, Tps.—One new building erected, cost $8,000. Amount expended on permanent improvements, $1,491. Amount expended on sanitation, $52. E. Langlois, Township Clerk, Warren.

Rawdon, Tp.—Opening for canning factory. Number of buildings erected, 6; cost $2,000. Amount expended on permanent improvements, $5,000. W. F. Bateman, Township Clerk, Spring Brook.

Rayside, Tp.—Opening for butter and cheese factory. Number of buildings erected, 9; cost $3,500. Amount expended on permanent improvements, $1,600. E. Joliat, Township Clerk, Boninville.

Reach, Tp.—Number of buildings erected, 11; cost $2,000. Amount expended on permanent improvements, $3,000. Amount expended on sanitation, $37. W. F. Dobson, Township Clerk, Manchester.

Renfrew, Tn.—Textile factory started. Owns and operates waterworks, cost $135,843; power plant, cost $177,125. Openings for industries of any character. Number of buildings erected, 73; cost $128,000. Amount expended on permanent improvements, $79,120. Amount expended on sanitation, $1,115. J. A. Devenny, Town Clerk, Renfrew.

Richards, Tp.—See Hagarty and Richards Tps.

Richmond, Tp.—Number of buildings erected, 2. Amount expended on permanent improvements, $1,700. James McKittrick, Township Clerk, Selby.

Ridout, Tp.—See McLean and Ridout Tps.

Richmond W., V.—Owns and operates lighting system, cost $3,500. Good opening for flour mill, foundry. Number of buildings erected, 7; cost $6,500. Amount expended on permanent improvements, $1,200. John Rielly, Village Clerk, Richmond West.

Richmond Hill, V.—Greenhouses started. Owns and operates electric light system, cost $6,000. Number of buildings erected, 7; cost $18,000. Amount expended on permanent improvements, $1,000. A. J. Hume, Village Clerk, Richmond Hill.

Ridgetown, Tn.—Canning factory started. Owns and operates waterworks, cost $35,000; electric light plant, cost $10,500. Good openings for factories. One new building erected, cost $2,500. Amount expended on permanent improvements, $2,000. D. Cochrane, Town Clerk, Ridgetown.

Rochester, Tp.—Two brick and tile factories started. Owns and operates telephone system, cost $13,000. Openings for canning factories. Number of buildings erected, 6; cost $8,000. Amount expended on permanent improvements, $4,170. Amount expended on sanitation, $6,925. M. N. Mousseau, Township Clerk, South Woodslee.

Rockland, Tn.—Planing factory started. Openings for brick, lime and cement factories, furniture factory, foundry, etc. Number of buildings erected, 20; cost $30,000. Amount expended on permanent improvements, $3,300. Amount expended on sanitation, $100. J. N. Lagrois, Town Clerk, Rockland.

Roddick, Tp.—See Alberton and Roddick Tps.

Rodney, V.—Good openings for foundry, furniture factory. Number of buildings erected, 3; cost $10,000. Amount expended on permanent improvements, $1,200. J. D. Shaw, Village Clerk, Rodney.

Rolph, Buchanan and Wylie, Tps.—One new building erected, cost $300. Amount expended on permanent improvements, $600. Florence McCarthy, Township Clerk, Wylie.

Romney, Tp.—Opening for canning factory, brick and tile yard. Number of buildings erected, 15; cost $18,000. Amount expended on permanent improvements, $2,500. Amount expended on sanitation, $2,000. J. W. Kennedy, Township Clerk, Wheatley.

Ross, Tp.—Good openings for industries of any character. Number of buildings erected, 14; cost $15,000. Amount expended on permanent improvements, $3,000. Amount expended on sanitation, $14. P. R. Pounder, Township Clerk, Forester's Falls.

Roxborough, Tp.—Number of buildings erected, 20; cost $15,000. Amount expended on permanent improvements, $1,451. F. D. Brunet, Township Clerk, Moose Creek.

Ryde, Tp.—Number of buildings erected, 2; cost $3,000. Amount expended

on permanent improvements, $2,000. William Lowe, Township Clerk, Bracebridge.

Ryerson, Tp.—Number of buildings erected, 2; cost $3,500. Amount expended on permanent improvements, $355. Amount expended on sanitation, $65. C. McArthur, Township Clerk, Burk's Falls.

St. Catharines, C.—Tool factory, knitting factory started. Owns and operates waterworks, cost $550,000; gas plant, cost $100,000. Openings for industries of any character. Number of buildings erected, 398; cost $811,335 Amount expended on permanent improvements, $28,000. Amount expended on sanitation, $57,000. J. A. Pay, City Clerk, St. Catharines.

St. Edmunds, Tp.—Opening for industries of any character. No new buildings erected. Amount expended on permanent improvements, $1,500. L. Spears, Township Clerk, Tobermory.

St. Joseph, Tp.—Openings for a shoemaker. Number of buildings erected, 4; cost $1,200. Amount expended on permanent improvements, $4,251. H. M. Ross, Township Clerk, Richard's Landing.

St. Mary's, Tn.—Cement plant started. Owns and operates waterworks, cost $70,000; electric light plant, cost $29,000; power plant, cost $. Openings for various industries. Number of buildings erected, 7; cost $66,800. Amount expended on permanent improvements, $3,500. T. M. Clark, Town Clerk, St. Mary's.

St. Thomas, C.—Shoe factory, metallic vault industry started. Owns and operates gas works, cost $194,356; electric light plant, cost $113,926; waterworks, cost $329,964; street railway, cost $75,000. Openings for any kind of iron industry. Number of buildings erected, 60; cost $177,000. Amount expended on permanent improvements, $50,000. Amount expended on sanitation, $5,000. W. B. Doherty, City Clerk, St. Thomas.

St. Vincent, Tp.—Brick factory started. One new building erected, cost $30,000. Amount expended on permanent improvements, $5,500. Geo. G. Albery, Township Clerk, Meaford.

Salter, May and Harrow, Tps.—Good openings for industries of any character. Number of buildings erected, 15; cost $7,000. Amount expended on permanent improvements, $100. Amount expended on sanitation, $100. Oscar Cole, Township Clerk, Massey.

Saltfleet, Tp.—Basket factory and stone quarry started. Good openings for jam and canning factories. Number of buildings erected, 50; cost $75,000. Amount expended on permanent improvements, $3,000. Amount expended on sanitation, $180. Erland Lee, Township Clerk, Stoney Creek.

Sandfield, Tp.—Opening for shingle, lath and planing mill, sash and door factory. Amount expended on permanent improvements, $573. T. W. Thomson, Township Clerk, Big Lake.

Sandwich, Tn.—Canning factory started. Openings for industries of any character. Number of buildings erected, 51; cost $65,590. Amount expended on permanent improvements, $8,708. Amount expended on sanitation, $13,197. E. R. North, Town Clerk, Sandwich.

Sandwich, S., Tp.—Owns and operates telephone system, cost $15,000. Good opening for canning factories. Number of buildings erected, 12; cost $4,750. Amount expended on permanent improvements, $2,300. Amount expended on sanitation, $52. John McAuliffe, Township Clerk, Maidstone.

Sandwich, E., Tp.—Good openings for industries of any character. Number of buildings erected, 95; cost $25,000. Amount expended on permanent improvements, $80,000. Amount expended on sanitation, $5,000. Louis Laramie, Township Clerk, Tecumseh.

Sandwich, W., Tp.—Number of buildings erected, 41; cost $36,900. Amount expended on permanent improvements, $9,455. E. Bondy, Township Clerk, Canard River.

Sarawak, Tp.—Number of buildings erected, 2; cost $2,500. Amount expended on permanent improvements, $757. Amount expended on sanitation, $11. W. Morton, Township Clerk, East Linton.

Sarnia, Tn.—Jam factory and chain factory started. Owns and operates waterworks, cost $207,946. Good openings for industries of any character. Number of buildings erected, 43; cost $92,700. Amount expended on permanent improvements, $15,106. Amount expended on sanitation, $1,701. J. D. Stewart, Town Clerk, Sarnia.

Saugeen, Tp.—Number of buildings erected, 9; cost $10,000. Amount expended on permanent improvements, $4,576. Amount expended on sanitation, $12. F. W. Elliott, Port Elgin.

Sault Ste. Marie, C.—Openings for industries of any character. Number of buildings erected, 284; cost $738,970. Amount expended on permanent improvements, $35,079. Amount expended on sanitation, $51,392. C. J. Pim, City Clerk, Sault Ste. Marie.

Scarborough, Tp.—No new buildings erected. Amount expended on permanent improvements, $10,777. J. H. Richardson, Township Clerk, West Hill.

Schreiber, Tp.—Number of buildings erected, 15; cost $23,950. Geo. A. Evans, Township Clerk, Schreiber.

Scott, Tp.—Number of buildings erected, 2; cost $2,350. Amount expended on permanent improvements, $2,018. Amount expended on sanitation, $80. A Gray, Township Clerk, Uxbridge.

Scugog, Tp.—Number of buildings erected, 6; cost $5,000. Amount expended on permanent improvements, $550. T. Graham, Township Clerk, Port Perry.

Seaforth, Tn.—Automobile and machine repair shop started. Owns and operates waterworks, cost $14,500; electric light plant, cost $25,000. Good opening for canning factory, condensed milk factory, woollen mill, linen mill. Number of buildings erected, 2; cost $20,000. Amount expended on permanent improvements, $2,000. Amount expended on sanitation, $700. J. A. Wilson, Town Clerk, Seaforth.

Sebastopol, Tp.—Two saw mills started. No new buildings erected. Amount expended on permanent improvements, $64. C. Walther, Township Clerk, Vanbrugh.

Seneca, Tp.—Opening for blacksmith. Amount expended on permanent improvements, $1,300. Amount expended on sanitation, $60. N. H. Wickett, Township Clerk, York.

Seymour, Tp.—Openings for industries of any character. Amount expended on permanent improvements, $7,302. J. B. Ferris, Township Clerk, Campbellford.

Shallow Lake, V.—Saw mill started. Openings for furniture and woodenware factories, cement and lime plants. No new buildings erected. Amount expended on permanent improvements, $850. Amount expended on sanitation, $75. R. E. Young, Village Clerk, Shallow Lake.

Sheffield, Tp.—Good opening for brick yard. Number of buildings erected, 23; cost $4,500. Amount expended on permanent improvements, $394. J. Aylesworth, Township Clerk, Tamworth.

Shelburne, V.—Shingle and saw and planing mill started. Owns and operates waterworks, cost $22,000. Openings for canning factory, foundry, carriage factory, cider mill, shoe factory, woollen mills, whitewear factory, overall and pant factory. Number of buildings erected, 2; cost $1,500. Amount expended on permanent improvements, $1,000. T. Whatley, Village Clerk, Shelburne.

Sherbourne, etc., Tps.—Good openings for hardwood furniture and toboggan factories. No new buildings erected. Amount expended on permanent improvements, $985. Geo. D. McKey, Township Clerk, Dorset.

Sherbrooke, Tp.—Number of buildings erected, 4; cost $5,500. Amount expended on permanent improvements, $600. L. McCallum, Township Clerk, Stromness.

Sherbrooke, N., Tp.—See Dalhousie and Sherbrooke N., Tps.

Sherbrooke, S., Tp.—Good opening for pulp mill. One new building erected, cost $1,500. H. J. Buchanan, Township Clerk, Maberly.

Sherwood, Jones and Burns, Tps.—Amount expended on permanent improvements, $400. S. E. Smith, Township Clerk, Barry's Bay.

Shuniah, Tp.—Number of buildings erected, 25; cost $10,000. Amount expended on permanent improvements, $18,000. H. A. McKibbon, Township Clerk, Port Arthur.

Sidney, Tp.—Electric power plant started. Opening for industries of any character. Number of buildings erected, 20; cost $100,000. Amount expended on permanent improvements, $6,000. Amount expended on sanitation, $131. A. M. Chapman, Township Clerk, Belleville.

Simcoe, Tn.—Lithographing industry, canning factory started. Owns and operates waterworks, cost $85,656. Openings for industries of any character. Number of buildings erected, 105; cost $250,000. Amount expended on permanent improvements, $8,000. Amount expended on sanitation, $5,000. W. C. McCall, Town Clerk, Simcoe.

Sioux-Lookout, Tn.—Openings for dressed lumber factory, sash and door factory, brick and lime yard. Number of buildings erected, 68; cost $20,000. Amount expended on permanent improvements, $3,500. Amount expended on sanitation, $250. P. B. Discher, Town Clerk, Graham.

Smith, Tp.—Number of buildings erected, 9; cost $9,000. Amount expended on permanent improvements, $700. Amount expended on sanitation, $58. J. W. Kelly, Township Clerk, Bridgenorth.

Smith's Falls, Tn.—Owns and operates waterworks, cost $200,000. Number of buildings erected, 60; cost $144,175. Amount expended on permanent improvements, $26,147. Amount expended on sanitation, $25,022. J. A. Lewis, Town Clerk, Smith's Falls.

Snowdon, Tp.—Amount expended on permanent improvements, $724.50. Amount expended on sanitation, $26. A. J. Scott, Township Clerk, Gelert.

Sombra, Tp.—Opening for cement works, butter factory, lumber yard. Amount expended on permanent improvements, $3,562. Amount expended on sanitation, $50. W. H. McGhee, Township Clerk, Wilkesport.

Somerville, Tp.—Good opening for lime and stone quarry. Number of buildings erected, 6; cost $7,000. Amount expended on permanent improvements,

$300. Amount expended on sanitation, $50. A. B. Townsend, Township Clerk, Burnt River.

SOPHIASBURG, Tp.—Canning factory started. Amount expended on permanent improvements, $7,932. C. H. Wright, Township Clerk, Demorestville.

SOUTHAMPTON, Tn.—Light and power plant started. Owns and operates waterworks, cost $43,093. Openings for woodworking industries. Number of buildings erected, 12; cost $15,700. Amount expended on permanent improvements, $3,979. Amount expended on sanitation, $46. J. C. Eckford, Town Clerk, Southampton.

SOUTH RIVER, V.—Stone quarry started. Opening for furniture and woodworking factories, creamery. Number of buildings erected, 2; cost $1,000. J. H. Boorse, Village Clerk, South River.

SOUTHWOLD, Tp.—Number of buildings erected, 5; cost $5,000. Amount expended on permanent improvements, $106. J. C. McLennan, Township Clerk, Fingal.

SPRINGER, Tp.—Number of buildings erected, 25; cost $7,500. Amount expended on permanent improvements, $2,200. Amount expended on sanitation, $70. O. Lafrance, Township Clerk, Sturgeon Falls.

SPRINGFIELD, V.—No new buildings erected. Amount expended on permanent improvements, $700. J. B. Lucas, Village Clerk, Springfield.

STAFFORD, Tp.—Number of buildings erected, 9; cost $3,000. Amount expended on permanent improvements, $1,400. J. Kidd, Township Clerk, Cobden.

STANHOPE, Tp.—No new buildings erected. Amount expended on permanent improvements, $161. W. Cooper, Township Clerk, Boskung.

STANLEY, Tp.—Good opening for a creamery. Number of buildings erected, 10; cost $10,000. Amount expended on permanent improvements, $5,009. Amount expended on sanitation, $95.60. R. J. Richardson, Township Clerk, Varna.

STAYNER, Tn.—Owns and operates waterworks, value $35,000. Opening for canning factory. No new buildings erected. Amount expended on permanent improvements, $720. Amount expended on sanitation, $39. J. Hood, Town Clerk, Stayner.

STEELTON, Tn.—Extensions to Algoma Steel Co., started. Owns and operates waterworks, cost $80,000; electric light plant, cost $30,000; also electric fire alarm system. Good opening for planing mill. Number of buildings erected, 204; cost $1,309,660. Amount expended on permanent improvements, $70,000. Amount expended on sanitation, $11,907. J. Robinson, Town Clerk, Steelton.

STEPHEN, Tp.—Good opening for canning factory, condensed milk factory. Number of buildings erected, 10; cost $16,500. Amount expended on permanent improvements, $5,000. Henry Eilber, Township Clerk, Crediton.

STEPHENSON, Tp.—Sawmill started. Good openings for sawmills and woodenware industries. Number of buildings erected, 4; cost $3,000. Amount expended on permanent improvements, $853. Daniel Bain, Township Clerk, Utterson.

STIRLING, V.—Owns and operates electric light system, value $10,000. Openings for industries of any character. Number of buildings erected, 4; cost $7,000. Amount expended on permanent improvements, $146. C. H. Luery, Village Clerk, Stirling.

STISTED, Tp.—No new buildings erected. Amount expended on permanent improvements, $823. Amount expended on sanitation, $5. W. H. Demaine, Township Clerk, Ashworth.

STORRINGTON, Tp.—No new buildings erected. Amount expended on permanent improvements, $2,500. H. J. Moreland, Township Clerk, Sunbury.

STRATFORD, C.—Knitting factory, brass factory, harness factory, shoe factory, and factory for the manufacture of desks of all kinds, started. Owns and operates waterworks, cost $264.187; electric light plant, cost $148.186. Good openings for stove works, carpet factory, carriage factory, waggon and automobile factory, rubber works, trunk factory, tin and graniteware factory, steel works, cutlery, buttons, whitewear, cotton goods, thread, etc. Number of buildings erected, 88; cost $367,233. Amount expended on permanent improvements, $45,277. Amount expended on sanitation, $23,979.45. R. R. Lang, City Clerk, Stratford.

STRATHROY, Tn.—Owns and operates waterworks and electric light plant, cost $66,000. Good opening for knitting factory, shoe factory, etc. One new building erected, cost $10,000. Amount expended on permanent improvements $2,141. Amount expended on sanitation, $470. F. W. Atkinson, Town Clerk, Strathroy.

STOUFFVILLE, V.—Owns and operates waterworks system, cost $26,500. Opening for canning factory. Number of buildings erected, 2; cost $3,000. Amount expended on permanent improvements, $1,267. J. Urquhart, Village Clerk, Stouffville.

STREETSVILLE, V.—Brick factories started. Owns and operates waterworks and electric light systems, value $32,000. Opening for brick works. One new building erected, cost $5,000. Amount expended on permanent improvements, $286. S. H. Smith, Village Clerk, Streetsville.

STRONG, Tp.—Opening for grist mill, woodworking factory. Number of buildings erected, 3; cost $2,000. Amount expended on permanent improvements, $1,700. Amount expended on sanitation, $20. A. M. Church, Township Clerk, Sundridge.

STURGEON FALLS, Tn.—Owns and operates waterworks system, value $44,376. Opening for flour mill, lumber mill, etc. Number of buildings erected, 2; cost $12,000. Amount expended on permanent improvements, $771. Amount expended on sanitation, $1,716. J. D. Cockburn, Town Clerk, Sturgeon Falls.

STURGEON POINT, V.—Number of buildings erected, 2; cost $1,310. Amount expended on permanent improvements, $190. Amount expended on sanitation, $117. G. H. Hopkins, Village Clerk, Lindsay.

SUDBURY, Tn.—Owns and operates waterworks and electric light plant, cost $243,364. Number of buildings erected, 165; cost $473,513. Amount expended on permanent improvements, $43,094. Amount expended on sanitation, $37,362. Geo. Elliott, Town Clerk, Sudbury.

SULLIVAN, Tp.—Number of buildings erected, 6; cost $8,000. Amount expended on permanent improvements, $6,416. A. Stephen, Township Clerk, Desboro.

SUNDRIDGE, V.—Staves and headings factory started. Good openings for woodworking industries, tailor shop. No new buildings erected. Amount expended on permanent improvements, $200. John Harper, Village Clerk, Sundridge.

SUNNIDALE, Tp.—Opening for cement works. Number of buildings erected, 10; cost $15,000. Amount expended on permanent improvements, $2,300. Amount expended on sanitation, $50. T. F. Burrows, Township Clerk, Stayner.

SUTTON, V.—Opening for woollen mill, foundry. Number of buildings erected, 9; cost $12,000. Amount expended on permanent improvements, $360.

Amount expended on sanitation, $75. F. F. Tremayne, Village Clerk, Sutton West.

Sydenham, Tp.—Number of buildings erected, 4; cost $2,000. Amount expended on permanent improvements, $8,710. J. Cannon, Township Clerk, Annan.

Tara, V.—Openings for industries of any character. One new building erected, cost $400. Amount expended on permanent improvements, $429. Amount expended on sanitation, $40. W. J. Taylor, Village Clerk, Tara.

Tarbutt and Tarbutt Additional, Tps.—Owns and operates telephone system, cost $800. Opening for general blacksmith and general merchant. Number of buildings erected, 3; cost $2,000. Amount expended on permanent improvements, $550. R. H. Barr, Township Clerk, MacLennan.

Tarentorus, Tp.—Number of buildings erected, 15; cost $4,050. Amount expended on permanent improvements, $4,541. B. R. McMullin, Township Clerk, Sault Ste. Marie.

Tavistock, V.—Owns and operates waterworks, cost $20,000. Openings for industries of any character. Number of buildings erected, 4; cost $7,000. Amount expended on permanent improvements, $1,500. J. C. Field, Village Clerk, Tavistock.

Tay, Tp.—Good opening for industries requiring electric power and water fronts. Number of buildings erected, 47; cost $8,300. Amount expended on permanent improvements, $2,513. T. W. Brown, Township Clerk, Victoria Harbour.

Tecumseth, Tp.—Number of buildings erected, 12; cost $20,000. Amount expended on permanent improvements, $2,000. W. Lilly, Township Clerk, Beeton.

Teeswater, V.—Owns and operates waterworks for fire protection only, cost about $15,000. Number of buildings erected, 2; cost $5,000. Amount expended on permanent improvements, $350. J. Farquharson, Village Clerk, Teeswater.

Tehkummah, Tp.—Number of buildings erected, 3; cost $1,800. Amount expended on permanent improvements, $1,050. J. E. Hopkins, Township Clerk, Tehkummah.

Thamesville, V.—Owns and operates electric light plant, cost $6,500; waterworks system, cost $12,000. Opening for sugar beet factory, flax mill, market gardener. Number of buildings erected, 5; cost $12,000. Amount expended on permanent improvements, $500. W. J. Cryderman, Village Clerk, Thamesville.

Thedford, V.—Opening for a canning factory. No new buildings erected. Amount expended on permanent improvements, $1,431. Amount expended on sanitation, $10. W. Brooks, Village Clerk, Thedford.

Thessalon, Tn.—Owns and operates waterworks and electric light plant, value, $40,000. Good openings for woodworking industries. No new buildings erected. Amount expended on permanent improvements, $1,000. Amount expended on sanitation, $60. E. G. Scott, Town Clerk, Thessalon.

Thessalon, Tp.—Good opening for cheese factory. No new buildings erected. Amount expended on permanent improvements, $997. J. C. E. Clinton, Township Clerk, Thessalon.

Thompson, Tp.—Saw mill started. Opening for blacksmith, box factory, furniture factory. Number of buildings erected, 5; cost $1,000. Amount expended on permanent improvements, $400. T. W. Baker, Township Clerk, Dean Lake.

Thorah, Tp.—Opening for canning factory. Number of buildings erected,

3; cost $5,700. Amount expended on permanent improvements, $12,130. Amount expended on sanitation, $52. J. McArthur, Township Clerk, Beaverton.

THORNBURY, Tn.—Owns and operates waterworks and lighting plant, cost $30,000. Good opening for industries of any character. Number of buildings erected, 4; cost $7,200. Amount expended on permanent improvements, $5,000. E. Rorke, Town Clerk, Thornbury.

THOROLD, Tn.—Pulp and paper mills started. Owns and operates waterworks, cost $90,000; electric light plant, cost $40,000. Openings for industries requiring water or electric power. Number of buildings erected, 27; cost $75,000. Amount expended on permanent improvements, $75,000; amount expended on sanitation, $25,000. D. J. C. Munro, Town Clerk, Thorold.

THOROLD, Tp.—Paper mill, pulp board mill, glass factory, steel factory started. Good openings for industries of any character. Number of buildings erected, 15; cost $15,000. Amount expended on permanent improvements, $4,406. J. A. Clark, Township Clerk, Fonthill.

THURLOW, Tp.—Canning factory started. Good opening for tannery, paper mills, lime kiln, canning factory. Number of buildings erected, 10; cost $15,000. Amount expended on permanent improvements, $4,500. Amount expended on sanitation, $50. C. A. Callery, Township Clerk, Canifton.

TILBURY, Tn.—Brick and tile yard, saw mill started. Owns and operates waterworks, cost $10,500. Opening for apple evaporator, sugar refinery, pickle factory, broom factory. Number of buildings erected, 20; cost $60,000. Amount expended on permanent improvements, $792. Amount expended on sanitation, $541.89. W. A. Dutton, Town Clerk, Tilbury.

TILBURY E., Tp.—Drainage tile factory, tile factory, market garden started. Opening for brick and tile works, canning factory. Number of buildings erected, 54; cost $42,000. Amount expended on permanent improvements, $2,000. A. Farquharson, Township Clerk, Merlin.

TILBURY, N., Tp.—Number of buildings erected, 20; cost $20,000. Amount expended on permanent improvements, $1,200. J. A. Tremblay, Township Clerk, Tilbury.

TILBURY W., Tp.—Owns and operates telephone system, cost $20,000; gas lighting plant, cost $500. Opening for canning factory and flax mill. Number of buildings erected, 13; cost $17,000. Amount expended on permanent improvements, $1,100. Amount expended on sanitation, $70. S. T. Anderson, Township Clerk, Comber.

TILLSONBURG, Tn.—Owns and operates electric light and power plant, cost $31,000. Number of buildings erected, 35; cost $65,000. Amount expended on permanent improvements, $6,309. Amount expended on sanitation, $7,475. A. E. Raynes, Town Clerk, Tillsonburg.

TINY, Tp.—Number of buildings erected, 10; cost $8,000. Amount expended on permanent improvements, $9,000. M. Beaudoin, Township Clerk, Lafontaine.

TISDALE, Tp.—Number of buildings erected, 350; cost $337,455. Amount expended on permanent improvements, $27,012. Amount expended on sanitation, $4,464. W. M. Whyte, Township Clerk, South Porcupine.

TIVERTON, V.—No new buildings erected. Amount expended on permanent improvements, $350. R. N. Blair, Village Clerk, Tiverton.

TORBOLTON, Tp.—Amount expended on permanent improvements, $633. D. B. McLaren, Township Clerk, Dirleton.

TORONTO, C.—Owns and operates waterworks plant, cost $8,500,000; electric light plant, cost $4,500,000. Openings for industries of various character. Number of buildings erected, 10,217: cost $27,401,761. Amount expended on permanent improvements, $2,516,174. Amount expended on sanitation, $2,194,738. W. A. Littlejohn, City Clerk, Toronto.

TORONTO, Tp.—Brick factory started. Opening for canning factory, basket factory. Number of buildings erected, 40; cost $70,000. Amount expended on sanitation, $200. C. H. Gill, Township Clerk, Dixie.

TORONTO, GORE, Tp.—One new building erected, cost $3,000. Amount expended on permanent improvements, $3,000. N. Harrison, Township Clerk, Castlemore.

TOSSORONTO, Tp.—Number of buildings erected; 6; cost $6,000. Amount expended on permanent improvements, $2,000. Thomas Irwin, Township Clerk, Lisle.

TOTTENHAM, V.—Sash and door factory started. Owns and operates electric light plant, cost $8,000. Good openings for boot and shoe factory, furniture factory, etc. Number of buildings erected, 3; cost $5,000. Amount expended on permanent improvements, $1,000. S. H. Nolan, Village Clerk, Tottenham.

TOWNSEND, Tp.—Opening for cheese or butter factory. Number of buildings erected, 10; cost $8,500. Amount expended on permanent improvements, $3,035. Amount expended on sanitation, $50. J. Ross, Township Clerk, Waterford.

TRAFALGAR, Tp.—Opening for brick yard. Amount expended on permanent improvements, $5,000. C. Hall, Township Clerk, Trafalgar.

TRENTON, Tn.—Good openings for industries requiring electric power. Number of buildings erected, 25: cost $15,000. Amount expended on permanent improvements, $4,000. G. W. Ostrom, Town Clerk, Trenton.

TUCKERSMITH, Tp.—Owns and operates telephone system, cost $37,000. No new buildings erected. Amount expended on permanent improvements, $5,875. D. F. McGregor, Township Clerk, Seaforth.

TUDOR AND CASHEL, Tps.—Opening for mining industry. One new building erected, cost $300. Amount expended on permanent improvements, $1,423. W. Clennie, Township Clerk, Millbridge.

TURNBERRY, Tp.—One new building erected, cost $2,000. Amount expended on permanent improvements, $10,306. P. Powell, Township Clerk, Wingham.

TWEED, V.—Good openings for various industries. Number of buildings erected, 5; cost $8,000. Amount expended on permanent improvements, $400. Amount expended on sanitation, $400. P. T. Bowlby, Village Clerk, Tweed.

TYENDINAGA, Tp.—Opening for cheese factory and grist mill. Number of buildings erected, 4: cost $2,500. Amount expended on permanent improvements, $2,370. P. O'Shaughnessy, Township Clerk, Melrose.

USBORNE, Tp.—Number of buildings erected, 14: cost $14,000. Amount expended on permanent improvements, $2,600 on roads and bridges and about 2,900 days of statute labour. Amount expended on sanitation, $7. F. Morley, Township Clerk, Whalen.

UXBRIDGE, Tn.—Furniture factory started. Opening for piano factory, boot and shoe factory, foundry. No new buildings erected. Amount expended on permanent improvements, $700. M. H. Crosby, Town Clerk, Uxbridge.

Uxbridge, Tp.—Opening for canning factory or pickle factory. Number of buildings erected, 5; cost $6,000. Amount expended on permanent improvements, $2,100. Amount expended on sanitation, $53. J. H. Millard, Township Clerk, Altona.

Van Horne, Tp.—No new buildings erected. Amount expended on permanent improvements, $2,000. T. Marshall, Township Clerk, Dryden.

Vankleek Hill, Tn.—Opening for carriage or wagon factory, canning factory, butter factory. Number of buildings erected, 4; cost $8,000. Amount expended on permanent improvements, $500. H. C. Jones, Town Clerk, Vankleek Hill.

Vaughan, Tp.—Number of buildings erected, 40; cost $. Amount expended on permanent improvements, $10,000. J. B. McLean, Township Clerk, Maple.

Verulam, Tp.—Number of buildings erected, 3; cost $1,450. G. W. Taylor, Township Clerk, Bobcaygeon.

Vespra, Tp.—Opening for cement works, glass factory. Number of buildings erected, 20; cost $20,000. Amount expended on permanent improvements, $1,000. Amount expended on sanitation, $300. A. B. Coults, Township Clerk, Barrie.

Victoria Harbour, V.—Opening for box factory, cement works. Number of buildings erected, 6; cost $5,500. Amount expended on permanent improvements, $1,684. Amount expended on sanitation, $55. E. B. Brown, Village Clerk, Victoria Harbour.

Vienna, Tn.—Owns and operates natural gas plant, gas furnished free by gas company, cost $280. One new building erected, cost $3,000. Amount expended on permanent improvements, $422. S. S. Clutton, Town Clerk, Vienna.

Wainfleet, Tp.—Number of buildings erected, 25; cost $25,000. Amount expended on permanent improvements, $2,419. Jos. Henderson, Jr., Township Clerk, Marshville.

Walkerton, Tn.—Biscuit factory and saddlery hardware and steel goods factory started. Owns and operates waterworks, cost $45,000. Good openings for foundry, canning factory, rope works. Number of buildings erected, 10; cost $17,400. Amount expended on permanent improvements, $2,254. Amount expended on sanitation, $448. J. H. Scott, Town Clerk, Walkerton.

Walkerville, Tn.—Auto parts factory, lubricator works, die factory, drill factory, stove factory, auto painting factory started. Openings for industries of any character. Number of buildings erected, 69; cost $281,200. Amount expended on permanent improvements, $32,650. Amount expended on sanitation, $18,700. C. H. Robinson, Town Clerk, Walkerville.

Wallace, Tp.—Number of buildings erected, 7; cost $10,000. Amount expended on permanent improvements, $2,900. Amount expended on sanitation, $50. David Greer, Township Clerk, Gowanstown.

Wallaceburg, Tn.—Cut glass industry started. Good openings for industries of various character. Number of buildings erected, 45; cost $132,725. Amount expended on permanent improvements, $40,000. H. E. Johnson, Town Clerk, Wallaceburg.

Walpole, Tp.—Opening for brick and tile factory. Number of buildings erected, 14; cost $25,800. Amount expended on permanent improvements, $11,690. Amount expended on sanitation, $125.50. S. A. Thompson, Township Clerk, Nanticoke.

WALSINGHAM, N., Tp.—Number of buildings erected, 4; cost $2,000. Amount expended on permanent improvements, $4,351. Amount expended on sanitation, $158. E. J. Hodson, Township Clerk, Langton.

WALSINGHAM S., Tp.—Opening for canning factory. Number of buildings erected, 7; cost $5,750. Amount expended on permanent improvements, $1,800. W. M. Townsend, Township Clerk, Walsingham Centre.

WARDSVILLE, V.—Chopping mill, cold storage started. Opening for canning factory, evaporator, saw and planing mill. Number of buildings erected, 2; cost $2,500. Amount expended on sanitation, $200. W. J. Walton, Village Clerk, Wardsville.

WARWICK, Tp.—Number of buildings erected, 6; cost $2,500. Amount expended on permanent improvements, $5,800. N. Herbert, Township Clerk, Warwick.

WATERDOWN, V.—Evaporator started. Owns and operates hydro-electric plant for power, etc., cost $6,500. Opening for basket factory, flour and grist mill. Number of buildings erected, 2; cost $6,000. Amount expended on permanent improvements, $1,000. Amount expended on sanitation, $55. J. C. Medlar, Village Clerk, Waterdown.

WATERFORD, V.—Owns and operates electric light plant, cost $5,600. Opening for sash and door factory, butter factory, machine shop. Number of buildings erected, 2; cost $2,400. Amount expended on permanent improvements, $600. J. Ross, Village Clerk, Waterford.

WATERLOO, Tp.—Number of buildings erected, about 30; cost $25,000. Amount expended on permanent improvements, $9,000. G. A. Tilt, Township Clerk, Blair.

WATERLOO, Tn.—Owns and operates waterworks, cost $104,449; gas works, cost $44,949; electric lighting plant, cost $69,085. Good opening for sash and door factory. Locality excellent for any industry. Number of buildings erected, 60; cost $150,000. Amount expended on permanent improvements, $21,000. Amount expended on sanitation, $5,000. James C. Haight, Town Clerk, Waterloo.

WATERS, Tp.—Opening for brick yard, creamery, cheese factory, shingle mill. Number of buildings erected, 3; cost $1,500. P. G. Gaudrault, Township Clerk, Copper Cliff.

WATFORD, V.—Opening for knitting factory, canning factory, machine and moulding foundry. No new buildings erected. Amount expended on permanent improvements, $4,450. W. S. Fuller, Village Clerk, Watford.

WATT, Tp.—Number of buildings erected, 7; cost $2,800. Amount expended on permanent improvements, $1,201. A Hamilton, Township Clerk, Raymond.

WAWANOSH E., Tp.—Number of buildings erected, 7; cost $3,000. Amount expended on permanent improvements, $2,524. A Porterfield, Township Clerk, Marnoch.

WAWANOSH W., Tp.—Number of buildings erected, 1; cost $2,000. Amount expended on permanent improvements, $2,277. Amount expended on sanitation, $18. W. A. Wilson, Township Clerk, Lucknow.

WEBBWOOD, Tn.—Good opening for woodworking industry. Number of buildings erected, 3; cost $2,200. Amount expended on permanent improvements, $986. Amount expended on sanitation, $716. Thos. Brinsmead, Town Clerk, Webbwood.

WELLAND, Tn.—Canning factory and cotton mills started. Owns and operates waterworks, cost $165,000. Openings for all kinds of factories. Number of buildings erected, 178; cost $469,744. Amount expended on permanent improvements, $9,377. Amount expended on sanitation, $8,766. C. M. Webber, Town Clerk, Welland.

WELLESLEY, Tp.—Number of buildings erected, 25; cost $12,800. Amount expended on permanent improvements, $5,500. Amount expended on sanitation, $168. P. F. Schummer, Township Clerk, Clements.

WELLINGTON, V.—Creamery started. Openings for industries of any character. Number of buildings erected, 6; cost $13,300. Amount expended on permanent improvements, $1,832. Amount expended on sanitation, $71. E. A. Titus, Village Clerk, Wellington.

WEST LORNE, V.—Broom factory started. Good opening for automobile factory, furniture factory. Number of buildings erected, 2; cost $2,000. Amount expended on permanent improvements, $648. Amount expended on sanitation, $60. D. A. McKillop, Village Clerk, West Lorne.

WESTMINSTER, Tp.—Number of buildings erected, 25; cost $37,500. Amount expended on permanent improvements, $7,828. Amount expended on sanitation, $544.50. George Riddell, Township Clerk, Wilton Grove.

WESTON, V.—Lumber factory started. Owns and operates waterworks, cost $80,000; electric light plant, $20,000. Good opening for industries of any character. Number of buildings erected, 45; cost $113,000. Amount expended on permanent improvements, $2,400. J. H. Taylor, Village Clerk, Weston.

WESTPORT, V.—Number of buildings erected, 2; cost $4,000. W. S. Ripley, Village Clerk, Westport.

WHITBY, Tn.—Owns and operates waterworks and electric light plant, value $112,000. Openings for various industries. Number of buildings erected, 6; cost $11,000. Amount expended on permanent improvements, $500. J. White, Town Clerk, Whitby.

WHITBY E., Tp.—Opening for blacksmith. Number of buildings erected, 13; cost $15,000. Amount expended on permanent improvements, $7,000. W. Purvis, Township Clerk, Columbus.

WHITBY, Tp.—Number of buildings erected, 5; cost $10,000. Amount expended on permanent improvements, $3,000. Amount expended on sanitation, $21. D. Holliday, Township Clerk, Brooklin.

WHITCHURCH, Tp.—Brick factory started. Number of buildings erected, 6; cost $8,000. Amount expended on permanent improvements, $500. W. H. Clark, Township Clerk, Stouffville.

WHITNEY, Tp.—Saw mill, stamp mills started. Negotiating for fire protection plant, cost $6,000. Opening for pulp mill. No new buildings erected. Amount expended on permanent improvements, $2,000. J. M. Forbes, Township Clerk, Porcupine.

WIARTON, Tn.—Flooring factory enlarged, knitting goods and rubber goods factories under promotion. Owns and operates waterworks system, value $54,000. Openings for cement plant, furniture factory, foundry, etc. No new buildings erected. Amount expended on permanent improvements, $440. Amount expended on sanitation, $90. J. H. Fielding, Town Clerk, Wiarton.

WIDDIFIELD, Tp.—Explosives factory started. Number of buildings erected, 10; cost $3,200. Amount expended on permanent improvements, $991. J. A. Carmichael, Township Clerk, North Bay.

WILBERFORCE AND ALGONA NORTH, Tps.—No new buildings erected. Amount expended on permanent improvements, $4,107. Thos. McKibbon, Township Clerk, Eganville.

WILLIAMS E., Tp.—Number of buildings erected, 9; cost $1,000. Amount expended on permanent improvements, $1,831. D. A. Stewart, Township Clerk, Nairn.

WILLIAMS, W., Tp.—Good opening for creamery and cheese factory. Number of buildings erected, 3; cost $2,250. Amount expended on permanent improvements, $927. W. Dawson, Township Clerk, Park Hill.

WILLIAMSBURG, Tp.—Opening for sash and door factory. Number of buildings erected, 8; cost $12,000. Amount expended on permanent improvements, $4,352. Amount expended on sanitation, $16. G. Lane, Township Clerk, Williamsburg.

WILLOUGHBY, Tp.—Number of buildings erected, 2; cost $2,500. J. A. Plyley, Township Clerk, Chippawa.

WILMOT, Tp.—The police village of Baden in this township owns and operates hydro-electric lighting and power plant, cost $6,500. Number of buildings erected, 18; cost $24,000. Amount expended on permanent improvements, $12,300. Amount expended on sanitation, $266. F. Holwell, Township Clerk, Baden.

WINCHESTER, Tp.—Number of buildings erected, 11; cost $14,000. Amount expended on permanent improvements, $4,876. Amount expended on sanitation, $200. G. Elliott, Township Clerk, Chesterville.

WINCHESTER, V.—Number of buildings erected, 3; cost $4,700. Amount expended on permanent improvements, $3,235. W. J. Leflamme, Village Clerk, Winchester.

WINDHAM, Tp.—Good opening for blacksmith. One new building erected, cost $1,000. Amount expended on permanent improvements, $4,222. J. T. Camfield, Township Clerk, Windham Centre.

WINDSOR, C.—Two cigar factories, motor street cleaning, lightning rod factory, mat factory, spring bed factory, motor factory, prepared roofing factory, confectionery factory started. Owns and operates waterworks, value $325,000; electric light plant, value, $38,223. Opening for industries of any character. Number of buildings erected, 417; cost $1,100,000. Amount expended on permanent improvements, $150,000. Amount expended on sanitation, $3,577. S. Lusted, City Clerk, Windsor.

WINGHAM, Tn.—Creamery started. Two other factories largely increased capacity. Owns and operates waterworks, value $44,000; electric light plant, value $37,000. Opening for industries of any character. Number of buildings erected, 10; cost $35,000. Amount expended on permanent improvements, $1,152. Amount expended on sanitation, $1,607. J. F. Groves, Town Clerk, Wingham.

WOLFE ISLAND, Tp.—Owns and operates steam ferry, cost $20,000. Opening for canning factory. Number of buildings erected, 2; cost $4,000. Amount expended on permanent improvements, $1,657. D. J. Dawson, Township Clerk, Kingston.

WOLFORD, Tp.—One new building erected, cost $800. Amount expended on permanent improvements, $1,979. G. W. Harris, Township Clerk, Jasper.

WOLLASTON, Tp.—Good opening for woodworking industries. No new buildings erected. Amount expended on permanent improvements, $600. Alex Miller, Township Clerk, Coe Hill.

Wood, Tp.—See Medora and Wood Tps.

Woodbridge, V.—Good opening for foundry, machine shop, woodworking industry. Number of buildings erected, 3; cost $6,000. Amount expended on permanent improvements, $500. Edward Brown, Village Clerk, Woodbridge.

Woodhouse, Tp.—Opening for cement brick and cement tile factory. Number of buildings erected, 25; cost $22,500. Amount expended on permanent improvements, $3,161. Amount expended on sanitation, $60. F. Bowlby, Township Clerk, Simcoe.

Woodstock, C.—Owns and operates waterworks, value $220,000; electric light and power plant, value $120,000. Openings for any kind of industries. Number of buildings erected, 30; cost $150,000. Amount expended on permanent improvements, $13,708. Amount expended on sanitation, $6,792. John Morrison, City Clerk, Woodstock.

Woodville, V.—Number of buildings erected, 2; cost $2,000. Amount expended on permanent improvements, $557. A. E. Staback, Village Clerk, Woodville.

Woolwich, Tp.—Number of buildings erected, 14; cost $15,000. Amount expended on permanent improvements, $4,800. W. J. Snider, Township Clerk, Conestogo.

Worthington and Blue, Tps.—Opening for small saw mill and planing mill. Number of buildings erected, 3; cost $2,000. Amount expended on permanent improvements, $2,774. H. Engebretson, Township Clerk, Sleeman.

Wroxeter, V.—Owns and operates electric light plant, cost $1,900. Opening for a butcher. No new buildings erected. Amount expended on permanent improvements, $193. J. Brethauer, Village Clerk, Wroxeter.

Wylie, Tp.—See Rolph, Buchanan and Wylie Tps.

Wyoming, V.—Opening for canning factory, box and barrel factory, and other factories of a similar character. Number of buildings erected, 2; cost $1,500. Amount expended on permanent improvements, $200. H. Taylor, Village Clerk, Wyoming.

Yarmouth, Tp.—Number of buildings erected, 17; cost $20,000. Amount expended on permanent improvements, $13,000. W. C. Caughell, Township Clerk, St. Thomas.

Yonge, Front, Tp.—Number of buildings erected, 3; cost $3,000. Amount expended on permanent improvements, $1,398. Amount expended on sanitation, $103. F. H. Mallory, Township Clerk, Mallorytown.

Yonge and Escott, Rear, Tps.—Opening for saw mill, grinding mill, cheese box factory. One new building erected, cost $1,200. Amount expended on permanent improvements, $2,005. R. E. Cornell, Township Clerk, Athens.

York, Tp.—Amount expended on permanent improvements, $65,287. Amount expended on sanitation, $916. W. A. Clarke, Township Clerk, 40 Jarvis St., Toronto.

Zone, Tp.—No new buildings erected. Amount expended on permanent improvements, $300. George Bedford, Township Clerk, Bothwell.

Zorra E., Tp.—Number of buildings erected, 50; cost $27,000. Amount expended on permanent improvements, $10,000. Amount expended on sanitation, $200. J. Anderson, Township Clerk, Woodstock.

Zorra W., Tp.—Number of buildings erected, 10; cost $8,000. Amount expended on permanent improvements, $4,435; statute labour, 3,300 days. Amount expended on sanitation, $58. A. Murray, Township Clerk, Embro.

STATISTICS TABULATED.

The preceding returns by the municipal clerks, as far as statistics are concerned, have been tabulated as follows, thus giving a clear view of the expenditure on new buildings, permanent improvements and sanitation. The additional column, introduced five years ago, has been repeated, showing the public utilities owned and operated by the municipalities, with the capital thus invested, the continuous increase having been most satisfactory.

MUNICIPAL STATISTICS.

C., city; Tn., town; V., village; Tp., Township.

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Abinger, Tp.	.....	.....	.....	.....	.....
Acton, V.	5	4,500	.....	.....	10
Adelaide, Tp.	10	6,200	2,500	90	.....
Adjala, Tp.	.....	.....	.....	.....	.....
Admaston, Tp.	7	1,205	850	.....	.....
Adolphustown, Tp.	.....	.....	710	.....	.....
Ailsa Craig, V.	1	1,500	674	120	.....
Albemarle, Tp.	7	5,050	2,292	.....	1,000
Alberton and Roddick, Tps.	4	4,000	2,185	.....	.....
Albion, Tp.	5	7,500	6,000	.....	.....
Aldborough, Tp.	.....	.....	.....	.....	.....
Alexandria, Tn.	8	15,000	4,300	.....	47,50
Alfred, Tp.	25	15,000	1,200	.....	.....
Algona, N., Tp.	.....	.....	.....	.....	.....
Algona, S., Tp.	.....	.....	28	.....	.....
Alice and Fraser, Tps.	20	6,000	780	.....	.....
Alliston, Tn.	6	10,000	250	1,500	27,000
Almonte, Tn.	.....	.....	2,500	.....	40,000
Alnwick, Tp.	17	5,250	1,300	19	.....
Alvinston, V.	1	2,300	.....	.....	.....
Amabel, Tp.	10	5,000	4,279	.....	.....
Amaranth, Tp.	4	6,000	6,700	.....	.....
Ameliasburgh, Tp.	4	8,000	1,182	29	.....
Amherst Island, Tp.	1	2,000	600	.....	.....
Amherstburg, Tn.	5	7,000	.....	120	64,500
Ancaster, Tp.	40	35,000	2,880	42	.....
Anderdon, Tp.	4	2,400	3,091	.....	.....
Anglesea, Tp.	.....	.....	.....	.....	.....
Anson and Hindon, Tps.	.....	.....	.....	.....	.....
Anstruther, Tp.	.....	.....	.....	.....	.....
Arkona, V.	1	6,000	250	.....	.....
Armour, Tp.	5	5,000	1,250	.....	.....
Arnprior, Tn.	7	31,100	3,363	400	90,460
Arran, Tp.	4	4,000	7,638	87	.....
Artemesia, Tp.	5	10,000	3,700	109	.....
Arthur, Tp.	6	6,000	4,000	.....	.....
Arthur, V.	2	4,000	1,500	50	.....
Ashfield, Tp.	.....	.....	4,345	25	.....
Asphodel, Tp.	.....	.....	2,000	.....	.....
Assiginack, Tp.	8	11 000	2,683	68	.....
Athens, V.	.....	.....	700	.....	.....
Athol, Tp.	5	5,200	217	.....	.....
Atwood, Tp.	5	3,000	714	.....	.....
Augusta, Tp.	20	10,000	5,000	600	.....
Aurora, Tn.	60	120,000	8,000	3,000	65,000

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No	$	$	$	$
Awenge, Tp.	.....	.....	.....	.....	.....
Aylmer, Tn.	7	128,000	12,000	.....	135,000
Ayr, V.	1	2,500	1,601	.....	5,550
Bagot and Blythfield, Tps.	3	2,500	300	25	.....
Balfour, Tp.	.....	.....	180	.....	.....
Bancroft, V.	3	4,000	3,500	.....	.....
Bangor, Wicklow & McClure Tps.	.....	.....	.....	.....	.....
Barrie, Tn.	63	94,237	3,098	8,070	215,306
Barrie, Tp.	.....	.....	50	.....	.....
Barton, Tp.	50	50,000	26,114	733	.....
Bastard & Burgess, S., Tps.	.....	.....	.....	.....	.....
Bath, V.	.....	.....	355	2	300
Bathurst, Tp.	12	10,000	680	169	.....
Bayfield, V.	.....	.....	436	.....	1,385
Bayham, Tp.	6	10,500	2,000	.....	.....
Beamsville, V.	13	10,000	.....	.....	27,000
Beaverton, V.	1	7,500	756	.....	.....
Beckwith, Tp.	2	3,000	1,000	.....	.....
Bedford, Tp.	5	4,000	1,200	.....	.....
Beeton, V.	2	1,000	500	.....	24,000
Belle River, V.	4	21,000	2,768	.....	.....
Belleville, C.	70	300,000	2,000	8,000	300,000
Belmont and Methuen, Tps.	7	7,000	2,089	.....	.....
Bentinck, Tp.	11	17,500	2,450	487	.....
Berlin, C.	252	831,213	47,553	25,376	936,450
Bertie, Tp.	65	60,000	4,471	198	.....
Beverly, Tp.	8	3,600	2,921	.....	.....
Bexley, Tp.	1	300	2,050	.....	.....
Biddulph, Tp.	12	15,000	6,594	18	.....
Billings, Tp.	4	3,200	1,675	.....	.....
Binbrook, Tp.	4	7,000	2,535	.....	.....
Blandford, Tp.	6	1,000	1,872	80	.....
Blanshard, Tp.	7	14,000	4,000	.....	.....
Blenheim, Tn.	3	10,000	.....	.....	13,000
Blenheim, Tp.	5	7,000	7,190	.....	.....
Blezard, Tp.	4	4,800	165	.....	.....
Blind River, Tn.	1	10,000	500	720	.....
Bloomfield, V.	1	25,000	2,000	.....	.....
Blyth, V.	2	7,000	300	.....	12,500
Bobcaygeon, V.	6	7,800	579	.....	25,000
Bolton, V.	11	22,000	450	.....	.....
Bonfield, Tn.	.....	.....	323	.....	.....
Bonfield, Tp.	16	12,000	600	12	.....
Bosanquet, Tp.	6	68,000	6,118	.....	.....
Bothwell, Tn.	.....	.....	.....	.....	10,500
Bowmanville, Tn.	58	141,000	3,200	1,500	.....
Bracebridge, Tn.	8	18,500	2,168	428	180,000
Bradford, V.	2	1,500	600	.....	.....
Brampton, Tn.	41	175,000	47,000	9,000	225,000
Brant, Tp.	12	12,000	5,000	100	.....
Brantford, C.	666	1,167,105	63,456	65,853	565,420
Brantford, Tp.	75	92,000	10,835	.....	.....
Bridgeburg, V.	40	33,400	3,547	32,000	40,000
Brighton, Tp.	7	7,000	3,129	25	.....
Brighton, V.	3	6,000	2,800	.....	.....
Brock, Tp.	6	6,000	6,500	200	.....

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Brockville, Tn.	38	80,265	57,882	5,850	500,951
Bromley, Tp.	3	5,000	800	.....	.....
Brooke, Tp.	8	15,000	7,672	33	18,000
Brougham, Tp.	.....	.....	350	.....	.....
Bruce, Tp.	.....	.....	3,545	.....	.....
Bruce Mines, Tn.	.....	.....	700	.....	.....
Brudenell & Lynedoch, Tps.	3	400	.....	.....	.....
Brunel, Tp.	3	2,000	500	.....	.....
Brussels, V.	.....	.....	763	20	45,000
Bruton, Tp.	.....	.....	.....	.....	.....
Buchanan, Tp.	.....	.....	.....	.....	.....
Bucke, Tp.	10	5,000	625	.....	.....
Burford, Tp.	.....	.....	7,000	.....	.....
Burgess, N., Tp.	1	1,500	275	.....	.....
Burgess, S., Tp.	.....	.....	.....	.....	.....
Burk's Falls, V.	5	6,800	16,552	6	37,000
Burleigh & Anstruther, Tps.	2	1,000	185	.....	.....
Burlington, V.	22	85,000	6,000	.....	60,000
Burns, Tp.	.....	.....	.....	.....	.....
Burpee, Tp.	.....	.....	400	.....	.....
Cache Bay, Tn.	.....	.....	1,195	13	.....
Caistor, Tp.	5	6,000	3,000	.....	.....
Caldwell, Tp.	6	3,000	3,176	.....	.....
Caledon, Tp.	2	2,700	6,745	.....	.....
Caledonia, Tp.	10	5,000	.....	.....	.....
Caledonia, V.	15	40,000	2,000	200	5,000
Calvin, Tp.	.....	.....	66	13	.....
Cambridge, Tp.	.....	.....	.....	.....	.....
Camden, Tp.	3	8,000	3,000	.....	.....
Camden, E., Tp.	6	10,000	55,000	.....	.....
Cameron, Tp.	.....	.....	600	.....	.....
Campbellford, Tn.	.....	.....	.....	.....	.....
Canborough, Tp.	.....	.....	4,000	.....	.....
Cannington, V.	1	3,000	.....	.....	.....
Canonto, N., Tp.	.....	.....	.....	.....	.....
Canonto, S., Tp.	.....	.....	.....	.....	.....
Caradoc, Tp.	10	10,000	4,000	24	16,000
Carden, Tp.	3	2,000	312	.....	.....
Cardiff, Tp.	3	12,000	80	.....	.....
Cardinal, V.	1	1,000	800	.....	.....
Cardwell, Tp.	3	1,500	246	.....	.....
Carleton Place, Tn.	6	24,200	.....	40,000	.....
Carling, Tp.	.....	.....	200	.....	.....
Carlow, Tp.	2	2,000	1,200	16	.....
Carnarvon, Tp.	.....	.....	1,700	.....	.....
Carrick, Tp.	19	15,000	2,000	100	.....
Cartwright, Tp.	9	7,300	796	31	.....
Casey, Tp.	5	3,000	4,000	.....	.....
Casselman, V.	2	3,000	688	155	5,000
Cashel, Tp.	.....	.....	.....	.....	.....
Cassimer, Jennings & Appleby, Tps.	7	3,500	1,500	.....	.....
Cavan, Tp.	8	3,700	6,137	.....	.....
Cavendish, Tp.	.....	.....	.....	.....	.....
Cayuga, V.	8	30,000	1,000	.....	.....
Cayuga, N., Tp.	10	18,000	4,000	.....	.....

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Cayuga, S., Tp.	1	1,000	300	.....	.....
Chaffey, Tp.	6	2,900	1,561	.....	.....
Chamberlain, Tp.	3	600	.....	.....	.....
Chandos, Tp.	5	970	181	78	3,000
Chapleau, Tp.	10	20,000	2,525	.....	41,255
Chapman, Tp.	3	5,000	2,032	33	.....
Chapple, Tp.	5	4,500	4,010	126	.....
Charlottenburg, Tp.	12	25,000	4,000	1,601	.....
Charlotteville, Tp.	7	10,000	1,500	25	.....
Chatham, C.	166	201,591	35,000	3,000	218,000
Chatham, Tp.	15	15,000	1,500	.....	.....
Chatsworth, V.	.....	.....	102	6	.....
Chelmsford, Tn.	4	2,500	1,680	100	.....
Chesley, Tn.	1	20,000	1,000	600	42,000
Chesterville, V.	3	8,500	238	45	.....
Chinguacousy, Tp.	2	3,000	12,000	.....	30,000
Chisholm, Tp.	2	1,800	1,170	.....	.....
Chippewa, V.	3	5,000	1,200	.....	1,200
Christie, Tp.	3	500	900	25	.....
Clara, Tp.	.....	.....	.....	.....	.....
Clarence, Tp.	250	350,000	12,000	1,025	.....
Clarendon & Miller, Tps.	2	600	650	.....	.....
Clarke, Tp.	.....	.....	3,882	54	.....
Clifford, V.	1	19,000	573	19	3,600
Clinton, Tn.	1	2,000	4,062	.....	80,000
Clinton, Tp.	.....	.....	5,776	.....	.....
Clyde, Tp.	.....	.....	.....	.....	.....
Cobalt, Tn.	13	37,950	20,000	8,000	125,000
Cobden, V.	4	27,000	1,385	316	.....
Cobourg, Tn.	30	82,000	4,731	184	.....
Cochrane, Tn.	375	725,000	18,000	.....	90,000
Cockburn Island, Tp.	3	4,000	500	.....	.....
Colborne, Tp.	8	13,000	2,582	.....	.....
Colborne, V.	.....	.....	1,250	.....	.....
Colchester, N., Tp.	20	17,000	3,875	.....	10,604
Colchester, S., Tp.	.....	30,000	3,100	20	.....
Coldwater, V.	3	10,000	2,200	.....	23,000
Coleman, Tp.	.....	.....	64,362	112	.....
Collingwood, Tp.	5	3,600	10,000	.....	7,000
Collingwood, Tn.	8	20,000	9,000	500	104,000
Copper Cliff, Tn.	73	114,800	3,253	754	.....
Cornwall, Tn.	11	20,000	4,000	.....	150,000
Cornwall, Tp.	6	8,000	4,800	1,300	.....
Courtright, V.	.....	.....	999	.....	.....
Cramahe, Tp.	7	8,550	8,620	20	.....
Creemore, V.	3	6,500	100	.....	25,000
Crosby, N., Tp.	2	3,500	808	.....	.....
Crosby, S., Tp.	4	2,000	1,856	.....	.....
Crowland, Tp.	100	1,500	2,130	950	.....
Crozier, Tp.	.....	.....	.....	.....	.....
Culross, Tp.	2	1,600	2,000	30	3,360
Cumberland, Tp.	15	8,600	4,000	.....	.....
Dack, Tp.	8	7,000	322	35	.....
Dalhousie & N. Sherbrooke, Tps.	10	3,000	875	.....	.....
Dalton, Tp.	1	1,000	500	.....	.....
Darling, Tp.	.....	.....	233	.....	.....

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No	$	$	$	$
Darlington, Tp.	.....	.....	.....	.....	.....
Dawn, Tp.	3	2,500	2,600	.....	11,000
Day & Bright Add., Tps.	4	4,000	500	60	.....
Delaware, Tp.	3	3,000	5,000	125	.....
Delhi, V.	.....	.....	2,213	59	.....
Denbigh, Abinger, etc., Tps.	5	1,600	185	5	.....
Derby, Tp.	4	5,500	3,204	143	.....
Dereham, Tp.	12	12,000	9,087	188	.....
Deseronto, Tn.	2	200	1,295	1,255	67,300
Digby, Tp.	.....	.....	.....	.....	.....
Dilke, Tp.	2	1,650	1,567	.....	.....
Dorchester, N., Tp.	.....	.....	5,000	.....	.....
Dorchester, S., Tp.	10	20,000	10,500	.....	.....
Douro, Tp.	5	1,200	1,769	.....	.....
Dover, Tp.	12	10,200	2,431	200	3,500
Downie, Tp.	8	17,000	11,291	109	.....
Draper, Tp.	1	400	1,400	.....	.....
Drayton, V.	1	900	1,056	60	.....
Dresden, Tn.	1	16,000	1,153	.....	31,900
Drummond, Tp.	15	15,000	907	49	.....
Drury, Denison, etc., Tps.	3	2,000	2,082	839	226
Dryden, Tn.	4	11,000	1,000	125	.....
Dudley, Tp.	.....	.....	.....	.....	.....
Dumfries, N., Tp.	7	28,000	4,400	.....	.....
Dumfries, S., Tp.	.....	.....	4,738	100	3,000
Dummer, Tp.	.....	.....	.....	35	.....
Dundalk, V.	.....	.....	3,045	18	6,000
Dundas, Tn.	23	52,500	12,519	112	106,693
Dungannon, Tp.	1	500	800	50	.....
Dunn, Tp.	9	6,300	100	.....	.....
Dunnville, Tn.	38	60,000	12,000	5,000	55,000
Dunwich, Tp.	.....	.....	.....	.....	.....
Durham, Tn.	8	16,000	4,000	.....	.....
Dutton, V.	6	12,000	8,347	.....	.....
Dymond, Tp.	4	5,550	2,808	.....	.....
Dysart, etc., Tps.	25	25,000	14,000	.....	400
Easthope, N., Tp.	9	6,500	5,491	.....	22,000
Easthope, S., Tp.	2	3,500	2,003	.....	.....
Eastnor, Tp.	4	4,200	2,129	1,014	.....
Eastview, V.	50	25,000	12,000	.....	.....
Edwardsburg, Tp.	25	35,000	3,000	25	.....
Egansville, V.	.....	.....	.....	.....	.....
Egremont, Tp.	2	2,500	2,660	70	.....
Ekfrid, Tp.	19	24,000	2,500	.....	.....
Elderslie, Tp.	14	14,000	4,900	25	.....
Eldon, Tp.	10	15,000	4,747	.....	.....
Elizabethtown, Tp.	6	5,800	15,092	119	.....
Ellice, Tp.	25	5,800	3,442	243	.....
Elma, Tp.	14	18,000	4,480	184	.....
Elmira, V.	20	35,000	3,881	.....	34,000
Elmsley, N., Tp.	.....	3,500	1,500	20	.....
Elmsley, S., Tp.	1	50	1,596	.....	.....
Elora, V.	3	7,000	500	.....	.....
Elzevir, Tp.	.....	.....	1,661	.....	.....
Embro, V.	.....	.....	4,500	.....	.....
Emily, Tp.	11	8,500	2,361	.....	.....

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns. Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Emo, Tp.	40	30,000	5,000	.....	.....
Englehart, Tn.	8	2,625	384	315	.....
Enniskillen, Tp.	.....	.....	10,100	2	.....
Ennismore, Tp.	5	5,000	1,900	40	.....
Eramosa, Tp.	18	19,000	2,500	200	6,000
Erin, Tp.	4	4,000	2,100	32	.....
Erin, V.	.....	.....	1,100	.....	.....
Ernesttown, Tp.	.....	.....	3,362	45	.....
Escott, Front of, Tp.	5	8,500	3,172	36	.....
Escott, Rear of, Tp.	.....	.....	.....	.....	.....
Esquesing, Tp.	20	26,000	6,886	.....	.....
Essa, Tp.	.....	.....	5,000	.....	.....
Essex, Tn.	6	11,000	1,939	50	35,000
Etobicoke, Tp.	200	200,000	20,000	.....	.....
Euphemia, Tp.	2	2,000	2,346	20	.....
Euphrasia, Tp.	8	5,000	3,300	.....	.....
Evanturel, Tp.	4	3,000	1,423	.....	.....
Exeter, V.	6	16,000	5,000	7,000	27,520
Eyre, Tp.	.....	.....	.....	.....	.....
Faraday, Tp.	.....	.....	525	.....	.....
Fenelon, Tp.	.....	5,000	2,500	.....	.....
Fenelon Falls, V.	.....	.....	300	.....	69,623
Fergus, V.	22	40,000	2,268	.....	35,000
Ferris, Tp.	10	3,000	340	70	.....
Finch, Tp.	10	10,000	5,315	150	.....
Finch, V.	2	10,800	176	.....	.....
Fitzroy, Tp.	12	13,800	2,000	.....	4,000
Flamboro, E., Tp.	8	6,200	3,460	120	.....
Flamboro, W., Tp.	7	5,000	3,900	140	.....
Flesherton, V.	1	1,000	2,100	125	.....
Flos, Tp.	2	2,400	3,000	.....	.....
Foley, Tp.	.....	.....	1,226	181	.....
Forest, Tn.	7	36,500	740	135	.....
Fort Erie, V.	8	12,000	1,100	.....	62,507
Fort Frances, Tn.	30	45,000	9,000	8,000	101,453
Fort William, C.	400	4,211,285	71,883	125,165	1,754,477
Fredericksburg, N., Tp.	5	2,000	849	30	.....
Fredericksburg, S., Tp.	4	4,000	725	.....	.....
Fullarton, Tp.	6	18,000	2,000	.....	.....
Gainsborough, Tp.	10	15,450	1,000	.....	.....
Galt, Tn.	240	506,130	34,361	18,255	336,000
Galway & Cavendish, Tps.	.....	.....	500	.....	.....
Gananoque, Tn.	11	120,900	5,000	.....	150,000
Garafraxa, E., Tp.	.....	.....	3,790	53	.....
Garafraxa, W., Tp.	2	3,500	2,500	.....	.....
Garden Island, V.	.....	.....	150	.....	.....
Georgetown, V.	20	40,000	6,000	88	43,000
Georgina, Tp.	6	7,500	4,876	.....	.....
Glamorgan, Tp.	.....	.....	20	.....	.....
Glanford, Tp.	10	20,000	.....	.....	.....
Glencoe, V.	2	2,000	1,597	96	20,000
Glenelg, Tp.	.....	5,000	2,560	50	.....
Gloucester, Tp.	.....	.....	6,000	585	5,000
Goderich, Tn.	49	98,000	.....	24,636	131,674
Goderich, Tp.	9	9,500	300	.....	11,330

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. new buildings erected during 1912.	Average cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
		$	$	$	$
Gordon, Tp.	7	3,000	1,800	.....	.....
Gore Bay, Tn.	4	15,000	400	.....	.....
Gosfield, N., Tp.	12	16,500	6,832	40	18,850
Gosfield, S., Tp.	31	27,295	6,339	.....	.....
Goulburn, Tp.	4	1,250	4,314	.....	.....
Gower, N., Tp.	3	18,200	1,700	.....	.....
Gower, S., Tp.	.....	.....	547	.....	.....
Grand Valley, V.	3	8,000	800	167	.....
Grantham, Tp.	20	20,500	2,894	40	.....
Grattan, Tp.	.....	.....	1,000	50	.....
Gravenhurst, Tn.	3	5,500	.....	.....	120,000
Greenock, Tp.	.....	.....	3,428	261	.....
Grey, Tp.	3	5,000	16,894	.....	.....
Griffith & Matawatchan, Tps.	.....	.....	350	.....	.....
Grimsby, V.	.....	.....	.....	.....	60,000
Grimsby, N., Tp.	14	17,450	4,525	131	.....
Grimsby, S., Tp.	4	7,500	6,500	.....	.....
Grimsthorpe, Tp.	.....	.....	.....	.....	.....
Guelph, C.	100	380,000	65,164	18,559	860,805
Guelph, Tp.	.....	.....	3,800	.....	.....
Gwillimbury, E., Tp.	6	3,000	4,000	.....	.....
Gwillimbury, N., Tp.	.....	.....	2,098	.....	.....
Gwillimbury, W., Tp.	1	1,200	3,000	.....	.....
Hagar, Tp.	3	2,250	4,123	.....	.....
Hagarty & Richards, Tps.	3	2,200	600	.....	.....
Hagerman, Tp.	8	2,250	6,350	7	.....
Hagersville, V.	5	10,000	900	.....	6,000
Haileybury, Tn.	10	103,000	9,067	28,855	113,186
Haldimand, Tp.	50	50,000	4,265	143	.....
Hallam, Tp.	5	2,30 0	188	.....	.....
Hallowell, Tp.	3	2,500	1,050	.....	.....
Hamilton, C.	2,391	5,491,800	380,545	253,264	3,716,156
Hamilton, Tp.	.....	.....	4,944	116	.....
Hanmer, Tp.	6	25,000	1,500	.....	.....
Hanover, Tn.	55	90,000	850	.....	38,000
Harley, Tp.	4	4,000	2,934	10	.....
Harris, Tp.	5	2,300	1,198	.....	.....
Harriston, Tn.	3	9,000	1,200	75	46,000
Harvey, Tp.	.....	.....	1,569	5	1,500
Harwich, Tp.	10	15,000	8,000	100	.....
Hastings, V.	4	7,500	650	25	.....
Havelock, V.	6	14,400	800	.....	.....
Hawkesbury, Tn.	15	30,000	820	.....	135,000
Hawkesbury, E., Tp.	20	18,000	1,600	.....	.....
Hawkesbury, W., Tp.	20	18,000	3,549	1,	.....
Hay, Tp.	4	15,000	3,000	.....	17,000
Head, Clara & Maria, Tps.	.....	.....	.....	.....	.....
Hensall, V.	.....	.....	800	.....	.....
Hepworth, V.	2	3,000	167	127	.....
Herschel, Tp.	.....	.....	.....	.....	.....
Hespeler, Tn.	33	75,000	7,541	.....	30,000
Hibbert, Tp.	.....	.....	6,500	.....	.....
Hilliard, Tp.	10	800	2,029	.....	.....
Hillier, Tp.	5	9,000	2,530	.....	.....
Hilton, Tp.	5	3,000	1,224	.....	.....
Himsworth N., Tp.	.....	.....	689	.....	.....

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent in sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Himsworth S., Tp.	5	5,000	.....	.....	.....
Hichinbrooke, Tp.	6	4,000	2,600	60	.....
Hindon, Tp.	2	1,100	200	.....	.....
Holland, Tp.	.....	.....	.....	.....	.....
Holland Landing, V.	.....	.....	400	.....	.....
Hope Tp.	6	10,000	5,291	.....	.....
Horton Tp.	5	9,000	944	.....	.....
Houghton, Tp.	4	4,000	1,365	.....	.....
Howard, Tp.	.....	.....	5,200	100	.....
Howe Island, Tp.	3	1,200	134	.....	.....
Howick, Tp.	2	800	8,993	112	6,273
Howland, Tp.	7	6,600	1,636	22	.....
Hudson, Tp.	7	2,500	2,162	.....	.....
Hullett, Tp.	3	7,100	8,000	.....	.....
Humberstone, Tp.	16	307,900	1,197	37	.....
Humberstone, V.	20	25,000	1,085	.....	.....
Humphrey, Tp.	3	6,000	3,000	.....	.....
Hungerford, Tp.	20	30,000	1,200	.....	.....
Huntingdon, Tp.	5	5,000	.....	.....	.....
Huntley, Tp.	.....	10,000	3,000	.....	.....
Huntsville, Tn.	3	3,000	1,500	.....	63,609
Huron, Tp.	10	12,000	9,075	266	40,000
Ignace, Tp.	.....	.....	200	.....	.....
Ingersoll, Tn.	25	100,000	5,000	.....	225,000
Innisfil, Tp.	16	13,900	4,670	238	.....
Iroquois, V.	.....	.....	.....	.....	40,000
Jaffray and Melick, Tps.	20	3,500	629	.....	.....
James, Tp.	10	5,000	448	.....	.....
Jarvis, V.	4	7,200	800	.....	.....
Jocelyn, Tp.	1	600	255	.....	.....
Johnson, Tp.	11	8,600	700	.....	.....
Joly, Tp.	2	1,000	350	.....	.....
Jones, Tp.	.....	.....	.....	.....	.....
Kaladar, Anglesea, etc., Tps.	.....	.....	552	.....	.....
Kearney, Tn.	.....	.....	312	50	700
Keewatin, Tn.	5	20,000	1,475	.....	.....
Kemptville, V.	1	500	1,400	.....	.....
Kennebec, Tp.	.....	.....	400	.....	.....
Kenora, Tn.	35	150,000	32,000	1,500	781,121
Kenyon, Tp.	.....	.....	.....	.....	.....
Keppel, Tp.	.....	.....	2,500	100	.....
Kerns, Tp.	4	3,500	2,124	.....	.....
Killaloe Station, V.	2	6,000	370	70	.....
Kincardine, Tn.	.....	.....	4,933	158	69,372
Kincardine, Tp.	.....	.....	4,500	.....	.....
King, Tp.	16	1,150	8,324	150	11,300
Kingston, C.	109	530,600	16,853	5,184	763,580
Kingston, Tp.	4	8,000	1,200	.....	.....
Kingsville, Tn.	6	9,000	8,000	100	33,000
Kinloss, Tp.	.....	.....	2,961	.....	.....
Kitley, Tp.	5	5,000	3,847	.....	.....
Korah and Parke, Tps.	8	13,100	6,500	12	.....
Laird, Tp.	.....	.....	1,500	.....	6,000
Lakefield, V.	2	2,000	2,057	.....	.....

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Lanark, Tp.	.....	.....	743	.....	.....
Lanark, V.	1	5,000	399	.....	.....
Lancaster, Tp.	13	18,300	4,800	.....	.....
Lancaster, V.	.....	.....	300	.....	.....
Latchford, Tn.	.....	.....	10	.....	.....
Lavallee, Tp.	.....	.....	4,855	.....	.....
Lavant, Tp.	.....	.....	100	.....	.....
Laxton, Digby and Longford Tps.	.....	5,000	1,200	.....	.....
Leamington, Tn.	75	152,000	11,447	85	52,500
Leeds and Lansdowne F., Tps.	15	27,500	7,862	30	.....
Leeds and Lansdowne R., Tps.	8	8,000	1,919	.....	.....
Limerick, Tp.	.....	.....	2,847	.....	.....
Lindsay, Tn.	5	2,800	2,025	.....	125,000
Lindsay, Tp.	.....	.....	.....	.....	.....
Listowel, Tn.	2	4,000	2,700	366	45,000
Little Current, Tn.	6	7,000	2,500	.....	.....
Lobo, Tp.	17	25,000	6,465	42	.....
Lochiel, Tp.	.....	.....	.....	.....	.....
Logan, Tp.	.....	.....	7,229	25	.....
London, C.	1,179	1,136,108	38,380	23,367	1,605,601
London, Tp.	202	255,000	37,000	400	.....
Longueil, Tp.	10	13,000	500	100	.....
L'Orignal, V.	.....	.....	500	.....	.....
Loughborough, Tp.	.....	.....	3,000	.....	.....
Louth, Tp.	.....	.....	.....	.....	.....
Lucan, V.	3	2,000	1,500	.....	5,000
Lucknow, V.	.....	.....	4,000	.....	10,000
Luther E., Tp.	2	2,400	12,000	90	.....
Luther W., Tp.	5	7,500	2,951	40	.....
Lutterworth, Tp.	6	6,000	400	.....	.....
McDougall, Tp.	1	750,000	1,500	.....	.....
McGillivray, Tp.	25	40,000	3,500	50	.....
McIrvine, Tp.	7	4,000	3,000	.....	.....
McKellar, Tp.	5	2,200	251	3	.....
McKillop, Tp.	6	8,000	2,540	110	19,202
McKim, Tp.	12	6,000	3,106	70	.....
McLean and Ridout, Tps.	.....	.....	1,700	.....	.....
McMurrich, Tp.	1	700	850	.....	.....
McNab, Tp.	12	6,000	4,000	.....	.....
Macaulay, Tp.	3	300	.....	.....	.....
Macdonald, Meredith, etc., Tps.	13	7,000	2,500	40	2,400
Machar, Tp.	2	1,500	3,511	50	.....
Machin, Tp.	.....	.....	.....	.....	.....
Madoc, Tp.	25	25,000	11,000	.....	.....
Madoc, V.	4	12,000	1,620	52	18,000
Maldstone, Tp.	.....	.....	.....	.....	12,130
Malahide, Tp.	.....	.....	8,000	8	.....
Malden, Tp.	18	171,400	2,245	.....	.....
Manvers, Tp.	11	13,000	2,092	54	.....
Mara, Tp.	1	.....	600	.....	.....
March, Tp.	3	4,000	587	35	.....
Mariposa, Tp.	4	24,700	4,684	.....	.....
Markdale, V.	.....	.....	100	75	30,000
Markham, Tp.	.....	.....	7,580	.....	.....
Markham, V.	6	5,000	3,500	.....	15,000
Marlborough, Tp.	5	10,000	400	.....	.....

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Marmora and Lake, Tps.	5	6,000	1,380	.....	.....
Marmora, V.	4	6,000	300	.....	6,000
Martland, Tp.	6	2,800	800	.....	.....
Maryborough, Tp.	.....	.....	3,286	66	.....
Marysburgh N., Tp.	7	10,000	1,000	30	.....
Marysburgh S., Tp.	15	10,000	2,000	.....	.....
Massey, Tn.	7	7,600	5,571	22,912	22,901
Matchedash, Tp.	.....	.....	4,000	.....	.....
Matheson, Tn.	9	1,625	108	.....	.....
Matilda, Tp.	5	10,000	3,050	.....	.....
Mattawa, Tn.	2	40,000	5,616	.....	.....
Mattawan, Tp	6	800	600	.....	.....
Maxville, V.	2	2,000	600	.....	.....
Mayo, Tp.	.....	.....	360	.....	.....
Meaford, Tn.	60	80,000	15,000	3,000	35,000
Medonte, Tp.	20	12,000	5,000	.....	20,000
Medora and Wood, Tps.	4	4,000	4,865	59	.....
Melancthon, Tp.	18	25,000	8,000	25	.....
Merrickville, V.	1	2,000	3,000	500	.....
Merriton, V.	28	100,000	2,000	1,000	80,000
Mersea, Tp.	30	25,000	5,600	.....	.....
Metcalfe, Tp.	2	1,200	4,909	52	.....
Middleton, Tp.	.....	.....	4,000	.....	.....
Midland, Tn.	61	195,000	15,000	14,000	152,000
Millbrook, V.	2	15,000	1,500	100	.....
Milton West, Tn.	.....	.....	.....	.....	50,500
Milverton, V.	5	18,300	3,000	40	.....
Mimico, V.	12	30,000	4,500	.....	20,000
Minden, Tp.	3	1,800	644	.....	.....
Minto, Tp.	1	2,000	4,000	.....	.....
Mitchell, Tn.	5	12,500	.....	.....	39,000
Monaghan N., Tp.	37	47,500	1,700	.....	.....
Monaghan, S., Tp.	1	2,500	1,318	.....	.....
Monck, Tp.	.....	.....	2,280	3	.....
Monmouth, Tp.	1	1,000	71	.....	.....
Mono, Tp.	6	1,200	10,000	60	.....
Montague, Tp.	10	8,000	2,000	.....	.....
Monteagle and Herschel, Tps.	.....	.....	2,600	200	.....
Moore, Tp.	4	5,000	8,000	.....	32,000
Morley, Tp.	20	15,000	3,600	.....	.....
Mornington, Tp.	7	10,000	7,380	.....	.....
Morris, Tp.	.....	.....	10,600	26	31,558
Morrisburg, V.	.....	.....	.....	.....	65,000
Morrison, Tp.	10	4,425	517	.....	.....
Mosa, Tp.	.....	.....	3,940	11	.....
Moulton, Tp.	6	7,000	500	.....	.....
Mount Forest, Tn.	.....	.....	500	150	50,000
Mountain, Tp.	4	6,000	6,077	.....	.....
Mulmur, Tp.	.....	.....	3,565	179	.....
Murray, Tp.	.....	.....	2,680	210	.....
Muskoka, Tp.	1	2,000	1,082	.....	.....
Nairn and Lorne, Tps.	.....	.....	264	10	.....
Napanee, Tn.	1	20,000	4,000	40,000	.....
Nassagaweya, Tp.	4	4,000	8,000	.....	.....
Neebing, Tp.	.....	.....	3,000	.....	.....

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Neelon and Garson, Tps.	20	12,000	2,621	62	.....
Nelson, Tp.	10	14,000	7,000	.....	.....
Nepean, Tp.	150	175,000	8,838	1,114	.....
Nepigon, Tp.	2	2,036	1,074	.....	3,000
Neustadt, V.	.....	.....	883	.....	.....
New Hamburg, V.	20	38,500	6,011	.....	25,000
New Liskeard, Tn.	12	12,000	6,986	8,490	86,193
Newboro,' V.	.....	.....	200	10	.....
Newburgh, V.	2	2,000	1,844	.....	.....
Newbury, V.	2	2,150	.....	.....	2,500
Newcastle, V.	2	3,000	1,000	100	.....
Newmarket, Tn.	50	60,000	8,160	.....	42,000
Niagara, Tn.	9	50,000	1,668	472	61,000
Niagara, Tp.	15	40,000	2,600	.....	.....
Niagara Falls, C.	156	432,935	25,000	19,836	360,000
Nichol, Tp.	2	1,000	3,511	50	.....
Nipissing, Tp.	1	1,000	700	50	.....
Nissouri E., Tp.	.....	.....	100	75	.....
Nissouri W., Tp.	7	12,000	4,000	100	.....
Normanby, Tp.	.....	.....	15,000	.....	.....
North Bay, Tn.	164	462,675	70,759	38,162	186,923
Norwich, V.	5	24,000	28,000	1,800	14,000
Norwich N., Tp.	.....	6,000	3,522	72	.....
Norwich S., Tp.	3	3,000	4,279	.....	.....
Norwood, V.	5	12,000	600	.....	.....
Nottawasaga, Tp.	2	1,000	5,429	50	.....
Oakland, Tp.	10	5,000	3,000	.....	.....
Oakley, Tp.	.....	.....	370	.....	.....
Oakville, Tn.	45	60,000	3,656	59,900	90,000
O'Connor, Tp.	4	2,300	728	.....	.....
Oil Springs, V.	.....	.....	708	.....	.....
Olden, Tp.	10	4,000	1,800	100	.....
Oliver, Tp.	10	15,000	4,410	58	8,000
Omemee, V.	1	1,500	454	.....	.....
Oneida, Tp.	20	30,000	857	52	.....
Onondaga, Tp.	5	5,000	4,000	.....	.....
Ops, Tp.	6	10,000	4,761	44	.....
Orangeville, Tn.	1	1,300	981	20	52,484
Orford, Tp.	10	21,000	2,530	237	.....
Orillia, Tn.	.....	.....	.....	.....	.....
Orillia, Tp.	20	20,000	3,129	.....	.....
Oro, Tp.	3	6,000	2,205	.....	.....
Osgoode, Tp.	20	.....	7,435	.....	.....
Oshawa, Tn.	160	300,000	76,000	14,000	153,268
Osnabruck, Tp.	50	25,000	4,500	36	.....
Oso, Tp.	6	5,000	2,000	.....	.....
Osprey, Tp.	18	8,000	3,226	46	.....
Otonabee, Tp.	8	8,000	3,692	55	.....
Ottawa, C.	627	3,621,850	686,910	296,494	3,425,484
Owen Sound, Tn.	164	296,017	19,870	8,496	722,231
Oxford on Rideau, Tp.	4	4,000	1,194	.....	.....
Oxford E., Tp.	7	12,300	5,586	43	.....
Oxford N., Tp.	14	10,000	2,400	.....	1,947
Oxford W., Tp.	7	21,200	3,000	43	3,553

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No	$	$	$	$
Paipoonge, Tp.	.....	.....	9,000	.....	3,000
Paisley, V.	.....	.....	1,500	315	18,000
Pakenham, Tp.	3	4,000	500	.....	.....
Palmerston, Tn.	10	25,000	2,500	500	61,000
Palmerston and North and South Canonto, Tps.	2	700	700	.....	.....
Papineau, Tp.	.....	.....	.....	.....	.....
Paris, Tn.	20	40,000	7,000	700	136,000
Parkhill, Tn.	.....	.....	1,000	.....	.....
Parry Sound, Tn.	25	50,000	2,500	225	137,381
Peel, Tp.	3	3,500	4,000	100	.....
Pelee Island, Tp.	12	10,100	1,735	.....	6,500
Pelham	14	40,000	4,692	40	.....
Pembroke, Tp.	7	4,200	129	.....	150,000
Penetanguishene, Tn.	10	12,000	1,200	1,500	70,000
Percy, Tp.	5	10,000	3,661	74	.....
Perry, Tp.	3	5,000	800	.....	.....
Perth, Tn.	.....	.....	1,500	3,000	14,000
Peterborough, C.	230	465,905	13,486	16,749	539,920
Petewawa, Tp.	8	6,000	200	.....	.....
Petrolea, Tn.	6	30,000	18,500	2,000	190,430
Pickering, Tp.	17	38,000	14,939	133	.....
Picton, Tn.	3	32,000	7,424	205	59,758
Pilkington, Tp.	4	4,800	2,663	.....	.....
Pittsburgh, Tp.	.....	.....	4,976	40	.....
Plantagenet N., Tp.	18	25,000	2,756	.....	.....
Plantagenet S., Tp.	.....	.....	.....	.....	.....
Plummer Additional, Tp.	6	4,000	3,000	.....	.....
Plympton, Tp.	3	3,500	.....	.....	.....
Point Edward, V.	3	.....	2,000	.....	.....
Port Arthur, C.	300	2,494,179	195,316	75,309	2,390,500
Port Carling, V.	2	1,000	780	108	.....
Port Colborne, V.	15	36,000	7,000	500	48,000
Port Dalhousie, V.	7	9,000	1,194	75	10,000
Port Dover, V.	19	25,000	2,300	472	.....
Port Elgin, V.	.....	.....	100	.....	42,000
Port Hope, Tn.	45	135,000	7,094	4,805	95,000
Port Perry, V.	.....	.....	2,000	.....	23,000
Port Rowan, V.	.....	.....	.....	.....	200
Portsmouth, V.	.....	.....	150	.....	.....
Port Stanley, V.	20	13,000	255	23	42,630
Portland, Tp.	9	8,400	4,835	55	.....
Powassan, Tn.	3	6,000	900	200	.....
Prescott, Tn.	5	15,000	5,000	40,100	78,000
Preston, Tn.	120	337,160	5,000	4,800	181,506
Prince, Tp.	.....	.....	1,387	.....	.....
Proton, Tp.	.....	.....	1,600	.....	.....
Puslinch, Tp.	4	6,000	1,500	80	.....
Radcliffe, Tp.	6	16,150	200	.....	.....
Raglan, Tp.	1	500	35	.....	.....
Rainham, Tp.	5	8,000	700	.....	.....
Rainy River, Tn.	16	48,000	722	.....	35,000
Raleigh, Tp.	20	60,000	4,550	225	.....
Rama, Tp.	7	8,500	300	.....	.....
Ramsay, Tp.	4	7,000	3,500	.....	.....
Ratter and Dunnett, Tps.	1	8,000	1,491	52	.....

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Rawdon, Tp.	6	2,000	5,000		
Rayside, Tp.	9	3,500	1,600		
Reach, Tp.	11	20,000	3,000	37	
Renfrew, Tn.	73	128,000	79,120	1,115	312,968
Richmond, Tp.			1,700		
Richmond West, V.	7	6,500	1,200		3,500
Richmond Hill, V.	7	18,000	1,000		6,000
Ridgetown, Tn.	1	2,500	2,000		45,500
Rochester, Tp.	6	8,000	4,170	6,925	13,000
Rockland, Tn.	20	30,000	3,300	100	
Rodney, V.	3	10,000	1,200		
Rolph, Buchanan, etc., Tps.	1	300	600		
Romney, Tp.	15	18,000	2,500	2,000	
Ross, Tp.	14	15,000	3,000	14	
Roxborough, Tp.	20	15,000	1,451		
Russell, Tp.					
Ryde, Tp.	2	3,000	2,000		
Ryerson, Tp.	2	3,500	356	65	
St. Catharines, C.	398	811,333	28,000	37,000	450,000
St. Edmunds, Tp.			1,560		
St. Joseph, Tp.	4	1,200	4,251		
St, Mary's, Tn.	7	66,800	3,500		114,000
St. Thomas, C.	60	177,000	50,000	5,000	713,246
St. Vincent, Tp.	4	30,000	5,500		
Salter, May and Harrow, Tps.	15	7,000	1,000	100	
Saltfleet, Tp.	50	75,000	3,000	180	
Sandfield, Tp.			573		
Sandwich, Tn.	51	65,590	8,708	13,197	
Sandwich E., Tp.	95	25,000	80,000	5,000	
Sandwich, S., Tp.	12	4,750	2,300	52	15,000
Sandwich W., Tp.	41	36,900	9,455		
Sarawak, Tp.	2	2,500	757	11	
Sarnia, Tn.	43	92,700	15,106	1,701	207,946
Sarnia, Tp.					
Saugeen, Tp.	9	10,000	4,576	12	
Sault Ste. Marie, Tn.	284	738,975	35,079	72,693	
Scarborough, Tp.			10,777		
Schreiber, Tp.	15	23,950			
Scott, Tp.	2	2,350	2,018	80	
Scugog, Tp.	6	5,000	550		
Seaforth, Tn.	2	20,000	2,000	700	39,500
Sebastopol, Tp.			60		
Seneca, Tp.			1,300	60	
Seymour, Tp.			7,302		
Shallow Lake, V.			800	30	
Sheffield, Tp.	23	4,500	394		
Shelburne, V.	2	1,500	1,000	500	22,000
Shelborne, etc., Tp.			985		
Sherbrooke, Tp.	4	15,500	2,400		
Sherbrooke S., Tp.	1	1,500			
Sherwood, Jones, etc., Tps.			400		
Shuniah, Tp.	25	10,000	18,000		
Sidney, Tp.	20	100,000	6,000	131	
Simcoe, Tn.	105	250,000	8,000	5,000	85,656
Sioux-Lookout, Tn.	68	20,000	3,500	250	
Smith, Tp.	9	9,000	700	58	

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Smith's Falls, Tn.	60	144,175	26,147	25,023	200,000
Snowdon, Tp.	.....	.....	725	26	.....
Sombra, Tp.	.....	.....	3,562	50	.....
Somerville, Tp.	6	7,000	300	50	.....
Sophiasburg, Tp.	.....	.....	7,932	.....	.....
Southampton, Tn.	12	15,700	3,976	46	43,093
South River, V.	2	1,000	.....	.....	.....
Southwold, Tp.	6	5,000	1,106	.....	.....
Springer, Tp.	25	7,500	2,200	70	.....
Springfield, V.	.....	.....	700	.....	.....
Stafford, Tp.	9	3,000	1,400	.....	.....
Stamford, Tp.	.....	.....	.....	.....	.....
Stanhope, Tp.	.....	.....	161	.....	.....
Stanley, Tp.	10	10,000	5,009	96	.....
Stayner, Tn.	.....	.....	720	39	35,000
Steelton, Tn.	203	1,309,660	70,000	11,907	110,000
Stephen, Tp.	10	16,500	5,000	.....	.....
Stephenson, Tp.	4	3,000	853	.....	.....
Stirling, V.	4	7,000	146	.....	10,000
Stisted, Tp.	.....	.....	823	5	.....
Storrington, Tp.	2	1,000	2,500	.....	.....
Stouffville, V.	2	3,000	1,267	.....	26,500
Stratford, C.	88	367,233	45,277	23,980	412,373
Strathroy, Tn.	1	10,000	2,141	471	66,000
Streetsville, V.	1	5,000	286	.....	32,000
Strong, Tp.	3	2,000	1,700	20	.....
Sturgeon Falls, Tn.	2	12,000	771	1,716	44,376
Sturgeon Point, V.	2	1,310	190	117	.....
Sudbury, Tn.	165	473,515	43,094	37,362	243,364
Sullivan, Tp.	6	8,000	6,416	.....	.....
Sundridge, V.	.....	.....	200	.....	.....
Sunnidale, Tp.	10	15,000	2,300	50	.....
Sutton West, V.	9	12,000	360	75	.....
Sydenham, Tp.	.....	2,000	8,710	.....	.....
Tara, V.	1	400	429	40	.....
Tarbutt and Tarbutt Addl. Tps.	3	2,000	550	.....	800
Tarentorus and St. Mary's, Tps.	15	4,050	4,541	.....	.....
Tavistock, V.	4	7,000	1,500	.....	20,000
Tay, Tp.	47	8,300	2,513	.....	.....
Tecumseth, Tp.	12	20,000	2,000	.....	.....
Teeswater, V.	2	5,000	350	.....	15,000
Tehkummah, Tp.	3	1,800	1,050	.....	.....
Thamesville, V.	5	12,000	500	.....	18,500
Thedford, V.	.....	.....	1,431	10	.....
Thessalon, Tn.	.....	.....	1,000	60	40,000
Thessalon, Tp.	.....	.....	997	.....	.....
Thompson, Tp.	5	1,000	400	.....	.....
Thorah, Tp.	3	5,700	12,130	52	.....
Thornbury, Tn.	4	7,200	5,000	.....	30,000
Thorold, Tn.	28	75,000	75,000	25,000	130,000
Thorold, Tp.	15	15,000	4,406	.....	.....
Thurlow, Tp.	9	15,000	4,500	50	.....
Tilbury, Tn.	20	60,000	792	542	10,500
Tilbury E., Tp.	.....	.....	.....	.....	.....
Tilbury N., Tp.	30	20,000	1,200	.....	.....
Tilbury W., Tp.	13	17,000	1,100	70	20,500

MUNICIPAL STATISTICS.—*Continued.*

Cities, Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Tillsonburg, Tn.	35	65,000	6,309	7,475	31,000
Timmins, Tn.	.....	.....	.....	.....	.....
Tiny, Tp.	10	8,000	9,000	.....	.....
Tisdale, Tp.	350	337,455	27,012	4,464	.....
Tiverton, V.	.....	.....	350	.....	.....
Torbolton, Tp.	.....	.....	623	.....	.....
Toronto, C.	10,217	27,401,761	2,516,174	2,194,738	13,000,000
Toronto, Tp.	40	70,000	.....	200	.....
Toronto Gore, Tp.	1	3,000	3,000	.....	.....
Toronto N., Tn.	.....	.....	.....	.....	.....
Tossorontio, Tp.	6	6,000	2,000	.....	.....
Tottenham, V.	3	5,000	1,000	.....	8,000
Townsend, Tp.	10	8,500	3,035	50	.....
Trafalgar, Tp.	.....	.....	5,000	.....	.....
Trenton, Tn.	25	15,000	4,000	.....	.....
Tuckersmith, Tp.	.....	.....	5,875	.....	37,000
Tudor and Cashel, Tps.	1	300	1,428	.....	.....
Turnberry, Tp.	1	2,000	10,306	.....	.....
Tuscarora, Tp.	.....	.....	.....	.....	.....
Tweed, V.	5	8,000	400	400	.....
Tyendinaga, Tp.	4	2,500	2,370	.....	.....
Usborne, Tp.	2	14,000	2,600	7	.....
Uxbridge, Tn.	.....	.....	700	.....	.....
Uxbridge, Tp.	5	6,000	2,100	53	.....
Van Horne, Tp.	.....	.....	2,000	.....	.....
Vankleek Hill, Tn.	4	8,000	1,500	.....	.....
Vaughan, Tp.	40	.....	10,000	.....	.....
Verulam, Tp.	3	1,450	2,350	.....	.....
Vespra, Tp.	20	20,000	1,000	300	.....
Victoria Harbour, V.	6	5,500	1,684	55	.....
Vienna, Tn.	1	3,000	422	.....	280
Wainfleet, Tp.	25	25,000	2,419	.....	.....
Walkerton, Tn.	10	17,400	2,254	448	45,000
Walkerville, Tn.	69	281,200	32,651	18,700	.....
Wallace, Tp.	7	10,000	2,900	50	.....
Wallaceburg, Tn.	45	132,725	40,000	.....	.....
Walpole, Tp.	14	25,800	11,690	126	.....
Walsingham N., Tp.	4	2,000	4,351	158	.....
Walsingham S., Tp.	7	5,750	1,800	.....	.....
Wardsville, V.	2	2,500	200	200	.....
Warwick, Tp.	6	2,500	5,802	.....	.....
Waterdown, V.	2	6,000	1,000	55	6,500
Waterford, V.	2	2,400	600	.....	5,600
Waterloo, Tn.	60	150,000	21,000	5,000	218,483
Waterloo, Tp.	30	25,000	9,000	.....	.....
Waters, Tp.	3	1,500	.....	.....	.....
Watford, V.	.....	.....	4,450	.....	.....
Watt, Tp.	7	2,800	1,201	.....	.....
Wawanosh E., Tp.	7	3,000	2,524	.....	.....
Wawanosh W., Tp.	1	2,000	2,277	47	.....
Webbwood, Tn.	3	2,200	986	716	.....
Welland, Tn.	178	469,744	9,377	8,766	110,560
Wellesley, Tp.	25	12,800	5,500	167	.....

MUNICIPAL STATISTICS.—*Continued.*

Cities. Towns, Villages and Townships.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
	No.	$	$	$	$
Wellington, V.	6	13,300	1,832	71	.....
West Lorne, V.	2	2,000	648	60	.....
Westmeath, Tp.	.....	.....	.....	.....	.....
Westminster, Tp.	25	37,500	7,828	545	.....
Weston, V.	45	113,000	2,400	.....	100,000
Westport, V.	2	4,000	.....	.....	.....
Whitby, Tn.	6	11,000	500	.....	112,000
Whitby, Tp.	5	10,000	3,000	21	.....
Whitby E., Tp.	13	15,000	7,000	.....	.....
Whitchurch, Tp.	6	8,000	500	.....	.....
Whitney, Tp.	.....	.....	2,000	.....	6,000
Wicklow, Tp.	.....	.....	.....	.....	.....
Wiarton, Tn.	.....	.....	440	90	54,000
Widifield, Tp.	10	3,200	991	.....	.....
Wilberforce and Algona N., Tps.	.....	.....	4,107	.....	.....
Williams E., Tp.	9	6,750	1,831	.....	.....
Williams W., Tp.	3	2,250	927	.....	.....
Willamsburg, Tp.	8	12,000	4,352	16	.....
Willoughby, Tp.	2	2,500	.....	.....	.....
Wilmot, Tp.	16	24,000	12,300	266	6,500
Winchester, Tp.	11	14,000	4,876	200	.....
Winchester, V.	3	4,700	3,235	.....	.....
Windham, Tp.	1	1,000	4,222	.....	.....
Windsor, C.	417	1,100,000	150,000	3,577	363,223
Wingham, Tn.	10	35,000	1,152	1,607	81,000
Wolfe Island, Tp.	2	4,000	1,657	.....	20,000
Wolford, Tp.	1	800	1,979	.....	.....
Wollaston, Tp.	.....	.....	600	.....	.....
Woodbridge, V.	3	6,000	500	.....	100
Woodhouse, Tp.	25	22,500	3,161	60	.....
Woodstock, C.	30	150,000	13,708	6,792	340,000
Woodville, V.	2	2,000	557	.....	.....
Woolwich, Tp.	14	15,000	4,800	.....	.....
Worthington and Blue, Tps.	3	2,000	2,774	.....	.....
Wroxeter, V.	.....	.....	193	.....	2,900
Wyoming, V.	1	1,500	200	.....	.....
Yarmouth, Tp.	17	20,000	13,000	.....	.....
Yonge Front, Tp.	.....	3,000	1,398	103	.....
Yonge and Escott Rear, Tps.	1	1,200	2,005	.....	.....
York, Tp.	.....	.....	65,288	916	.....
Zone, Tp.	.....	.....	300	.....	.....
Zorra E., Tp.	50	27,000	10,000	200	.....
Zorra W., Tp.	10	8,000	4,435	58	.....

MUNICIPAL STATISTICS.—*Concluded.*

SUMMARY.

Cities.	No. of new buildings erected during 1912.	Aggregate cost new buildings.	Spent on permanent improvements.	Spent on sanitation, including sewers.	Public utilities.
Cities.	No.	$	$	$	$
Belleville	70	300,000	2,000	8,000	300,000
Berlin	250	831,213	47,553	25,376	936,450
Brantford	666	1,167,105	63,456	65,853	565,420
Chatham	166	201,591	35,000	3,000	218,000
Fort William	400	4,211,285	71,883	125,165	1,682,477
Guelph	100	380,000	65,164	18,559	860,805
Hamilton	2,391	5,491,800	380,545	253,264	3,716,156
Kingston	109	530,600	16,853	5,184	763,580
London	1,179	1,136,108	38,380	23,367	1,605,601
Niagara Falls	156	432,935	25,000	19,836	360,000
Ottawa	627	3,621,850	686,910	296,494	3,425,484
Peterborough	230	465,905	13,486	16,749	539,920
Port Arthur	300	2,494,179	195,316	75,309	2,390,500
St. Catharines	398	811,333	28,000	57,000	450,000
St. Thomas	60	177,060	50,000	5,000	713,246
Stratford	88	367,233	45,277	23,980	412,373
Toronto	10,217	27,401,761	2,516,174	2,194,738	13,000,000
Windsor	417	1,100,000	150,000	3,577	363,223
Woodstock	30	150,000	13,708	6,792	340,000
19 Cities	17,854	51,271,898	4,444,705	3,227,243	32,643,235
127 Towns	4,255	11,067,768	2,095,327	695,385	10,503,756
140 Villages	653	1,312,660	243,760	47,205	1,531,840
529 Townships	5,150	5,887,481	1,955,449	43,712	559,688
815 Grand totals	27,912	69,539,807	8,739,241	4,008,545	45,238,519

PUBLIC UTILITIES CLASSIFIED.

The following table gives, in a classified form, the public utilities owned and operated by the municipalities, an additional column to contain this information having been appended to the municipal tables for the last five years. Again there is a satisfactory increase of these operations.

Municipalities.	(1) Water Works.	(2) Electric Lighting.	(3) Gas Works.	(4) Street Railways.	(5) Power Plant.	(6) Telephone System.	(7) Miscellaneous
	$	$	$	$	$	$	$
Acton, V.	.....	10,000	.....	.....	.....	.....	.....
Albemarle, Tp.	1,000	.....	.....	.....	.....	.....	.....
Alexandria, Tn.	35,750	11,750	.....	.....	.....	.....	.....
Alliston, Tn.	27,000	.....	.....	.....	.....	.....	.....
Almonte, Tn.	.....	40,000	.....	.....	.....	.....	.....
Amherstburg, Tn.	60,000	4,500	.....	.....	.....	.....	.....
Arnprior, Tn.	90,460	.....	.....	.....	.....	.....	.....
Aurora, Tn.	40,000	25,000	.....	.....	.....	.....	.....
Alymer, Tn.	100,000	35,000	.....	.....	.....	.....	.....
Ayr, V.	.....	5,550	.....	.....	.....	.....	.....
Barrie, Tn.	124,854	90,452	.....	.....	.....	.....	.....
Bath, V.	.....	300	.....	.....	.....	.....	.....
Bayfield, V.	.....	.....	.....	.....	.....	1,385	.....
Beamsville, V.	27,000	.....	.....	.....	.....	.....	.....
Beeton, V.	20,000	4,000	.....	.....	.....	.....	.....
Belleville, C.	200,000	.....	100,000	.....	.....	.....	.....
Berlin, C.	318,759	479,317	with (2)	138,374	.....	.....	.....
Blenheim, Tn.	.....	13,000	.....	.....	.....	.....	.....
Blyth, V.	(with 1)	12,500	.....	.....	.....	.....	.....
Bobcaygeon, V.	.....	25,000	.....	.....	.....	.....	.....
Bothwell, Tn.	4,500	6,000	.....	.....	.....	.....	.....
Bracebridge, Tn.	180,000	with (1)	.....	.....	with (1)	.....	.....
Brampton, Tn.	150,000	75,000	.....	.....	.....	.....	.....
Brantford, C.	565,420	.....	.....	.....	.....	.....	.....
Bridgeburg, V.	40,000	.....	.....	.....	.....	.....	.....
Brockville, Tn.	265,587	235,364	with (2)	.....	.....	.....	.....
Brooke, Tp.	.....	.....	.....	.....	.....	18,000	.....
Brussels, V.	.....	.....	.....	.....	.....	45,000	.....
Burk's Falls, V.	37,000	.....	.....	.....	.....	.....	.....
Burlington, V.	60,000	.....	.....	.....	.....	.....	.....
Caledonia, V.	.....	5,000	.....	.....	w th	.....	.....
Caradoc, Tp.	.....	.....	.....	.....	.....	16,000	.....
Casselman, V.	.....	.....	.....	.....	.....	.....	5,000
Chandos, Tp.	.....	.....	.....	.....	.....	3,000	.....
Campbellford, Tn.	.....	.....	.....	.....	.....	.....	.....
Chapleau, Tp.	41,255	.....	.....	.....	.....	.....	.....
Chatham, C.	200,000	18,000	.....	.....	.....	.....	.....
Chesley, Tn.	42,000	.....	.....	.....	.....	.....	.....
Chinguacousy, Tp.	.....	.....	.....	.....	.....	30,000	.....
Chippawa, V.	.....	1,200	.....	.....	.....	.....	.....
Clifford, V.	.....	3,000	.....	.....	.....	.....	600
Clinton, Tn.	60,000	20,000	.....	.....	.....	.....	.....
Cobalt, Tn.	125,000	.....	.....	.....	.....	.....	.....
Cochrane, Tn.	90,000	.....	.....	.....	.....	.....	.....

PUBLIC UTILITIES CLASSIFIED.—*Continued.*

Municipalities.	(1) Water Works.	(2) Electric Lighting.	(3) Gas Works.	(4) Street Railways.	(5) Power Plant.	(6) Telephone System.	(7) Miscellaneous.
	$	$	$	$	$	$	$
Colchester N., Tp.						10,604	
Coldwater, V.	23,000						
Collingwood, Tn.	74,000	30,000					
Collingwood, Tp.	7,000						
Cornwall, Tn.	150,000						
Creemore, V.	25,000						
Culross, Tp.						3,360	
Dawn, Tp.						11,000	
Deseronto, Tn.	48,300		19,000				
Dover, Tp.						3,500	
Dresden, Tn.	16,900	15,000					
Drury, etc., Tps.		226					
Dumfries S., Tp.							3,000
Dundalk, V.		6,000					
Dundas, Tn.	71,163	35,530					
Dunnville, Tn.	55,000						
Dysart, etc., Tp.s.		400					
Easthope N., Tp.						22,000	
Elmira, V.	34,000						
Eramosa, Tp.		6,000					
Essex, Tn.	35,000						
Exeter, V.	27,520						
Fenelon Falls, V.	69,623						
Fergus, V.	35,000						
Fitzroy, Tp.							4,000
Fort Erie, V.	58,723	3,784					
Fort Frances, Tn.	83,615	17,838					
Fort William, C.	870,474	227,150		465,368		191,485	
Galt, Tn.	200,000	136,000			with (2)		
Gananoque, Tn.	150,000						
Georgetown, V.	43,000						
Glencoe, V.		20,000					
Gloucester, Tp.	5,000						
Goderich, Tn.	131,674	with (1)					
Goderich, Tp.						11,330	
Gosfield N., Tp.						18,850	
Gravenhurst, Tn.	30,000	90,000					
Grimsby, V.	60,000						
Guelph, C.	344,774	363,553	(with 2)	152,478			
Hagersville, V.		6,000					
Haileybury, Tn.	113,186						
Hamilton, C.	3,466,156	250,000			with (2)		
Hanover, Tn.	38,000						
Harriston, Tn.	35,000	11,000					
Harvey, Tp.						1,500	
Hawkesbury, Tn.	135,000						
Hay, Tp.						17,000	
Hespeler, Tn.		30,000					
Howick, Tp.						6,273	
Huntsville, Tn.	63,609	with (1					
Huron, Tp.						40,000	

PUBLIC UTILITIES CLASSIFIED.—*Continued.*

Municipalities.	(1) Water Works.	(2) Electric Lighting.	(3) Gas Works.	(4) Street Railways.	(5) Power Plant.	(6) Telephone System.	(7) Miscellaneous.
	$	$	$	$	$	$	$
Ingersoll, Tn.	125,000	100,000					
Iroquois, V.	40,000	with (1)					
Jarvis, V.							
Kearney, Tn.	700						
Kenora, Tn.	212,872	43,159			507,637	17,453	
Kincardine, Tn.	47,562	21,810					
King, Tp.		1,800				9,500	
Kingston, C.	339,708	221,451	202,421				
Kingsville, Tn.	33,000						
Laird, Tp.							6,000
Leamington, Tn.	27,500		25,000				
Lindsay, Tn.	125,000						
Listowel, Tn.	29,000	16,000					
London, C.	1,135,528	470,073					
Lucan, V.		5,000					
Lucknow, V.	10,000						
McKillop, Tp.							19,202
Macdonald, Etc., Tps.							2,400
Madoc, V.		18,000					
Maidstone, Tp.							12,130
Markdale, V.	30,000						
Markham, V.	15,000	with (1)					
Marmora, V.		6,000					
Massey, Tn.	22,901						
Meaford, Tn.	35,000						
Medonte, Tp.							20,000
Merriton, V.	70,000	10,000					
Midland, Tn.	97,000	55,000					
Milton, Tn.	35,000	15,500					
Mimico, V.		20,000					
Mitchell, Tn.	39,000	with (2)					
Moore, Tp.							32,000
Morris, Tp.							31,558
Morrisburgh, V.	35,000	30,000					
Mount Forest, Tn.	50,000	with (1)					
Nepigon, Tp.	3,000						
New Hamburgh, V.		25,000					
New Liskeard, Tn.	86,193						
Newbury, V.		2,500					
Newmarket, Tn.	42,000	with (1)					
North Bay, Tn.	220,000	140,000					
Niagara, Tn.	36,000	25,000					
Niagara Falls, C.	186,923						
Norwich, V.		14,000			with (2)		
Oakville, Tn.	72,000	18,000					
Oliver, Tp.						8,000	
Orangeville, Tn.	52,484						
Oshawa, Tn.	153,268						
Ottawa, C.	3,000,000	425,484			with (2)		
Owen Sound, Tn.	359,326	206,763	156,142		with (2)		

PUBLIC UTILITIES CLASSIFIED.—*Continued.*

Municipalities.	(1) Water Works.	(2) Electric Lighting.	(3) Gas Works.	(4) Street Railways.	(5) Power Plant.	(6) Telephone System.	(7) Miscellaneous.
	$	$	$	$	$	$	$
Oxford N., Tp.		1,947			with (2)		
Oxford W., Tp.		3,553			with (2)		
Paipoonge, Tp.						3,000	
Paisley, V.	18,000						
Palmerston, Tn.	45,000	16,000					
Paris, Tn.	90,000	46,000					
Parry Sound, Tn.	63,752	73,629			with (2)		
Pelee, Tp.						6,500	
Pembroke, Tn.	150,000						
Penetanguishene, Tn.	46,000	24,000			with (2)		
Perth, Tn.		14,000					
Peterborough, C.	539,920						
Petrolea, Tn.	190,430						
Picton, Tn.	30,000	29,758					
Port Arthur, C.	873,000	160,000		735,000	393,000	229,500	
Port Colborne, V.	48,000						
Port Dalhousie, V.		10,000					
Port Elgin, V.	42,000						
Port Hope, Tn.	95,000						
Port Perry, V.	23,000	with (1)					
Port Rowan, V.		200					
Port Stanley, V.	24,872	17,758					
Prescott, Tn.	60,000	18,000					
Preston, Tn.	113,019	68,487					
Rainy River, Tn.	35,000						
Renfrew, Tn.	135,843				177,125		
Richmond W., V.		3,500					
Richmond Hill, V.		6,000					
Ridgetown, Tn.	35,000	10,500					
Rochester, Tp.						13,000	
St. Catharines, C.	350,000		100,000				
St. Mary's Tn.	70,000	29,000			15,000		
St. Thomas, C.	329,964	113,926	194,356	75,000			
Sandwich S., Tp.						15,000	
Sarnia, Tn.	207,946						
Seaforth, Tn.	14,500	25,000					
Shelburne, V.	22,000						
Simcoe, Tn.	85,656						
Smith's Falls, Tn.	200,000						
Southampton, Tn.	43,093						
Stayner, Tn.	35,000						
Steelton, Tn.	80,000	30,000					
Stirling, V.		10,000					
Stouffville, V.	26,500						
Stratford, C.	264,187	148,186					
Strathroy, Tn.	66,000	with (1)					
Streetsville, V.	32,000	with (1)					
Sturgeon Falls, Tn.	44,376						
Sudbury, Tn.	243,364	with (1)					
Tarbutt, etc., Tps.						800	
Tavistock, V.	20,000						
Teeswater, V.	15,000						

PUBLIC UTILITIES CLASSIFIED.—*Concluded.*

Municipalities.	(1) Water Works.	(2) Electric Lighting.	(3) Gas Works.	(4) Street Railways.	(5) Power Plant.	(6) Telephone System.	(7) Miscellaneous.
	$	$	$	$	$	$	$
Thamesville, V.	12,000	6,500	.....	.....	.....	.....	.....
Thessalon, Tn.	40,000	with (1)	.....	.....	.....	.....	.....
Thornbury, Tn.	30,000	with (1)	.....	.....	.....	.....	.....
Thorold, Tn.	90,000	40,000	.....	.....	.....	.....	.....
Tilbury, Tn.	10,500	.....	.....	.....	.....	.....	.....
Tilbury W., Tp.	.....	.....	500	.....	.....	20,000	.....
Tillsonburg, Tn.	.....	31,000	.....	.....	with (2)	.....	.....
Toronto, C.	8,500,000	4,500,000	.....	.....	.....	.....	.....
Toronto N., Tn.	.....	.....	.....	.....	.....	.....	.....
Tottenham, V.	.....	8,000	.....	.....	.....	.....	.....
Tuckersmith, Tp.	.....	.....	.....	.....	.....	37,000	.....
Vienna, Tn.	.....	.....	280	.....	.....	.....	.....
Walkerton, Tn.	45,000	.....	.....	.....	.....	.....	.....
Waterdown, V.	.....	.....	.....	.....	6,500	.....	.....
Waterford, V.	.....	5,600	.....	.....	.....	.....	.....
Waterloo, Tn.	104,449	69,085	44,949	.....	with (2)	.....	.....
Welland, Tn.	110,560	.....	.....	.....	.....	.....	.....
Weston, V.	80,000	20,000	.....	.....	.....	.....	.....
Whitby, Tn.	112,000	with (1)	.....	.....	.....	.....	.....
Whitney, Tp.	.....	.....	.....	.....	.....	.....	6,000
Wiarton, Tn.	54,000	.....	.....	.....	.....	.....	.....
Wilmot, Tp.	.....	6,500	.....	.....	with (2)	.....	.....
Windsor, C.	325,000	38,223	.....	.....	.....	.....	.....
Wingham, Tn	44,000	37,000	.....	.....	.....	.....	.....
Wolfe Island, Tp	.....	.....	.....	.....	.....	.....	20,000
Woodbridge, V	.....	.....	100	.....	.....	.....	.....
Woodstock, C	220,000	120,000	.....	.....	.....	.....	.....
Wroxeter, V.	.....	1,900	.....	.....	.....	.....	.....
Totals	30,756,198	10,002,206	842,748	1,566,220	1,100,602	808,655	161,890
Grand Total	45,238,519						

FREE EMPLOYMENT BUREAUS.

The six Free Employment offices operated by branches of this Bureau at Brantford, Hamilton, London, Ottawa, Berlin and Walkerville, have been carried on during the year with increased success. The details are tabulated below:

Applications for 1913.

Location.	Applications for work.		Help wanted.		Situations filled.	
	Male.	Female.	Male.	Female.	Male.	Female.
Berlin:—						
January	52	.....	37	27	22	.....
February	63	.....	17	45	11	.....
March	27	.....	52	36	27	.....
April	38	.....	53	12	38	.....
May	39	.....	61	39	39	.....
June	23	.....	28	2	19	.....
July	21	.....	23	2	18	.....
August	23	.....	21	.....	19	.....
September	19	.....	36	70	16	.....
October	51	.....	23	60	11	.....
November	135	.....	17	.....	6	.....
December	74	.....	8	.....	7	.....
Totals	565	.....	376	293	233	.....
Brantford:—						
January	29	2	42	2	15	2
February	26	2	44	1	20	1
March	31	1	41	1	18	1
April	21	.....	31	.....	17	.....
May	27	1	32	2	20	1
June	33	.....	47	.....	33	.....
July	57	1	55	.....	42	.....
August	39	3	60	5	38	3
September	37	.....	25	.....	22	.....
October	53	2	37	1	36	1
November	59	7	33	1	32	1
December	37	3	19	3	19	3
Totals	449	22	476	16	312	13
Hamilton:—						
January	21	1	22	1	21	1
February	27	.....	26	.....	26	.....
March	29	1	26	.....	26	.....
April	29	.....	32	.....	29	.....
May	25	.....	28	.....	25	.....
June	33	.....	36	.....	33	.....
July	28	.....	36	.....	28	.....
August	18	.....	16	.....	16	.....
September	32	.....	40	.....	32	.....
October	29	.....	33	.....	28	.....
November	30	.....	24	.....	24	.....
December	17	.....	5	.....	5	.....
Tot al	318	2	324	1	293	1

Applications for 1913.—*Concluded.*

Location.	Applications for work.		Help wanted.		Situations filled.	
	Male	Female.	Male.	Female.	Male.	Female.
London:—						
January	30	1	10	1	10	1
February	24	.....	19	.....	14	.....
March	26	.....	29	.....	25	.....
April	18	3	16	3	16	3
May	31	1	34	1	26	1
June	25	.....	24	.....	18	.....
July	30	1	29	1	22	1
August	23	.....	19	.....	16	.....
September	17	1	20	2	15	1
October	20	2	13	5	12	2
November	21	.....	14	.....	14	.....
December	18	.....	10	.....	10	.....
Totals	283	9	237	13	198	9
Ottawa:—						
January	71	3	10	3	10	3
February	45	5	18	2	18	2
March	40	4	20	3	20	3
April	24	4	5	7	5	4
May	37	3	13	6	13	3
June	34	4	13	10	13	4
July	22	6	7	3	6	3
August	39	2	16	.....	16	.....
September	32	2	10	5	10	2
October	42	7	18	3	18	3
November	76	3	9	3	9	3
December	72	5	11	1	11	1
Totals	534	48	150	46	149	31
Walkerville;—						
January	22	1	16	2	17	1
February	22	3	17	3	17	3
March	37	3	38	3	30	3
April	32	1	40	.....	32	.....
May	32	1	21	1	20	1
June	29	2	23	1	21	1
July	49	.....	21	.....	20	.....
August	32	1	16	1	12	1
September	3	5	10	3	8	3
October	32	3	14	.....	14	.....
November	9	1	28	1	21	1
December	41	.....	18	.....	18	.....
Totals	421	21	262	15	230	14
Grand Totals	2,570	102	1,825	384	1,415	68

Applications by Trades for 1913.

Trade or Calling.	Applications for work.		Help wanted.		Situations filled.	
	Male.	Female.	Male.	Female.	Male.	Female.
Agent	5	.....	4	.....	3	.....
Auto Assemblers	39	.....	20	.....	25	.....
Auto Finishers	5	.....	9	.....	.....	.....
Auto Mechanic	1	.....	.....	.....	.....	.....
Auto Rubbers	1	.....	1	.....	1	.....
Auto Stripers	1	.....	1	.....	1	.....
Auto Trimmers	2	.....	2	.....	2	.....
Auto Tester	12	.....	2	.....	1	.....
Body Makers	11	.....	9	.....	5	.....
Bakers	2	.....	1	.....	1	.....
Band Sawyer	1	.....	.....	.....	.....	.....
Bartenders	1	.....	1	.....	.....	.....
Basket Workers	2	.....	.....	.....	.....	.....
Blacksmiths	9	.....	8	.....	6	.....
Boilermakers	1	.....	.....	.....	.....	.....
Bookkeepers	3	.....	1	.....	1	.....
Boys over 16 Years	4	.....	9	.....	4	.....
Brass Moulders	6	.....	6	.....	5	.....
Brass Worker	1	.....	.....	.....	.....	.....
Brewery Workers	2	.....	2	.....	2	.....
Bricklayers	13	.....	23	.....	9	.....
Brush Hands	2	.....	1	.....	1	.....
Butchers	4	.....	.....	.....	1	.....
Cabinet Makers	.....	.....	5	.....	.....	.....
Canvassers	.....	.....	1	.....	.....	.....
Caretaker	2	.....	2	.....	2	.....
Carpenters	109	.....	170	.....	74	.....
Cattlemen	1	.....	1	.....	1	.....
Concrete Men	3	.....	.....	.....	.....	.....
Cigarmakers	1	.....	1	.....	1	.....
Clerks	18	.....	4	.....	3	.....
Coachmen	1	.....	1	.....	.....	.....
Coatmakers	.....	.....	3	.....	.....	.....
Cook	1	8	.....	3	.....	3
Cooper	.....	.....	2	.....	1	.....
Dipper Men	1	.....	1	.....	1	.....
Domestics	.....	80	.....	98	.....	54
Drill Hands	6	.....	4	.....	3	.....
Dyers	1	.....	.....	.....	.....	.....
Electricians	2	.....	1	.....	1	.....
Engineers	3	.....	1	.....	1	.....
Farm Hands	92	.....	132	1	64	1
Firemen	4	.....	4	.....	.....	.....
Finishers	10	.....	15	.....	10	.....
Furnace Men	1	.....	1	.....	1	.....
Gardeners	7	.....	5	.....	5	.....
Gas Fitters	1	.....	.....	.....	.....	.....
Grooms	3	.....	2	.....	.....	.....
Helpers	3	.....	2	.....	2	.....
Ice Cutters	5	.....	5	.....	5	.....
Iron Workers	16	.....	15	.....	14	.....
Labourers	1,876	.....	1,112	.....	933	.....
Lasters	2	.....	.....	.....	.....	.....
Lathe	1	.....	1	.....	1	.....
Lineman	1	.....	.....	.....	.....	.....

Applications by Trades for 1913.—*Concluded.*

Trade or calling.	Applications for work.		Help wanted.		Situations filled.	
	Male.	Female.	Male.	Female.	Male.	Female.
Machine Hands	18	.....	17	.....	15	.....
Machine Operators	.....	124	.....	278	.....	10
Machinists	22	.....	7	.....	6	.....
Matron	.....	1	.....	.....	.....	.....
Metal Workers	6	.....	7	.....	5	.....
Millwrights	1	.....	1	.....	1	.....
Moulders	2	.....	.....	.....	.....	.....
Night Watchman	3	.....	7	.....	.....	.....
Ornamental Iron Workers	14	.....	8	.....	8	.....
Painters	63	.....	71	.....	40	.....
Pattern Maker	1	.....	.....	.....	.....	.....
Plasterers	1	.....	1	.....	1	.....
Plumbers	6	.....	4	.....	4	.....
Porters	12	.....	8	.....	7	.....
Punchman	2	.....	.....	.....	.....	.....
Radiator Men	5	.....	2	.....	2	.....
Riveters	3	.....	.....	.....	.....	.....
Salesmen	1	.....	.....	.....	.....	.....
Shipper in Office	1	.....	.....	.....	.....	.....
Shoemaker (Factory)	3	.....	1	.....	1	.....
Starchers	1	.....	.....	2	.....	.....
Sticker Hand	1	.....	1	.....	1	.....
Stove Mounters	.....	.....	1	.....	.....	.....
Stenographers	.....	5	.....	.....	.....	.....
Surveyor	1	.....	.....	.....	.....	.....
Tool Makers	1	.....	1	.....	1	.....
Teamsters	136	.....	76	.....	64	.....
Time Keeper	2	.....	.....	.....	.....	.....
Tinsmiths	2	.....	4	.....	2	.....
Transmission Men	5	.....	2	.....	2	.....
Turret Lathe Hand	1	.....	.....	.....	1	.....
Upholsterers	5	.....	10	.....	1	.....
Vise Hands	.....	.....	3	.....	.....	.....
Waitress	.....	1	.....	1	.....	1
Watchmen	1	.....	.....	.....	.....	.....
Wire Workers	3	.....	1	.....	1	.....
Woodworker	1	.....	1	.....	1	.....
Total	2,570	102	1,825	384	1,415	68

LABOUR ORGANIZATIONS

The usual increase of returns from the labour organizations continued, but still the list is far from complete. It is not from want of effort to make it so, for there have been repeated appeals, but many of the secretaries manifest a strange reluctance to do their part in showing organized labour in its full proportions.

Allandale.

Name,—Order of Railway Conductors, No. 355. Organized July 23, 1893; total membership, 46; average earnings per week, $30; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 65; no difference in wages or hours between members and non-members; cash benefits, death, amount of insurance. President W. D. Scott, Essa St.; Corresponding Secretary, J. P. McMillin, 96 Cumberland St.; meets first Sunday in month.

Name,—Brotherhood of Locomotive Engineers, No. 486. Organized Feb. 2, 1892; total membership, 88; average earnings per week, mileage basis; average earnings per hour, mileage basis; wages paid monthly; no difference between members and non-members. President, T. C. Royce, Box 212, Allandale; Corresponding Secretary, J. Logue, Box 24, Allandale; meets first Sunday and third Monday in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 442. Organized April 10, 1891; total membership, 95; average earnings per week, mileage basis; average earnings per hour, pro rata; number of working hours first five days, varies; number on Saturday, varies; wages paid monthly; general cause of idleness, weather conditions; total number (union and non-union) employed at calling in locality, 160; no difference between members and non-members; death benefits, $1,000 to $5,000; body incorporated and registered. President, E. C. Cheesman, Bradford St., Barrie; Corresponding Secretary, F. C. Harris, 124 Tiffin St., Allandale; meets second and fourth Sundays in month.

Name,—Brotherhood of Railway Trainmen, No. 377. Organized June 16, 1885; total membership, 130; average earnings per week, varies; average earnings per hour, 24c. to 36c.; number of working hours first five days, varies; number on Saturday, varies; wages paid monthly; average number of days idle per member during year, varies; general cause of idleness, winter months; total number (union and non-union) employed at calling in locality, 150; no difference in wages and hours between members and non-members; cash benefits, death, $500 to $1,500; body incorporated and registered. President, C. McNiven, Bradford St., Barrie; Corresponding Secretary, W. H. Fell, Burton Ave., Allandale; meets second Wednesday 8 p.m., second Sunday, 2.30 p.m. every month.

Amherstburg.

Name,—International Longshoremen's Association, No. 377. Organized September, 1911; average earnings per week, $21; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 10; wages paid fortnightly; general cause of idleness, weather conditions; total number (union and non-union) employed at calling in locality, 100; difference in wages between

members and non-members, 10c. per hour. President, Robert Kett, Amherstburg; Corresponding Secretary, Albert Brown, Amherstburg; meets second and fourth Thursdays in month.

Name,—International Rock Drillers' Association, No. 20. Organized 1892; total membership, 305; average earnings per week, $19.80; average earnings per hour, 30c.; number of working hours first five days, 55; number on Saturday, 11; wages paid fortnightly; average number of days idle per member during year, 100; general cause of idleness, weather conditions; total number (union and non-union) employed at calling in locality, 305; all are members of organization; body incorporated and registered. President, R. Kett, Amherstburg; Corresponding Secretary, L. A. Parker, Amherstburg; meets first Monday in month.

Name,—International Brotherhood of Steam Shovel and Dredgemen, No. 20. Organized 1899; total membership, 32; average earnings per week, $35; average earnings per hour, 40c.; number of working hours first five days, 60; number on Saturday, 12; wages paid fortnightly; average number of days idle per member during year, 60; general cause of idleness, dredges laid up; total number (union and non-union) employed at calling in locality, 32; no difference in wages or hours between members and non-members; cash benefits, death, $100; body incorporated and registered. President, Sol. White, Amherstburg; Corresponding Secretary, J. J. Ryan, Box 196, Amherstburg; meets at call of officers.

Beaverton.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 262. Organized December, 1909; total membership, 35; average earnings per week, $10.20; average earning per hour, 17c.; number of working hours first five days, 50; number on Saturday, 10; wages pair monthly; no difference in wages or hours between members and non-members; body incorporated and registered. President, J. Thompson, Pefferlaw; Corresponding Secretary, F. Quinton, Udney; meets twice a year, January and July.

Belleville.

Name,—Bricklayers', Masons' and Plasterers' International Union, No. 30. Organized September, 1905; total membership, 28; average earnings per week, $20; average earnings per hour, 45c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly and fortnightly; average number of days idle per member during year, 84; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 37; difference in wages and hours between members and non-members, non-members work 9 hours for $3; death benefits, $250; body incorporated and registered. President, W. Johnson, Belleville, P.O.; Corresponding Secretary, A. Ellis, Belleville, P.O.; meets first and third Mondays in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 66. Organized March 24, 1877; total membership, 145; average earnings per week, $20; wages paid monthly; general cause of idleness, depression in business; total number (union and non-union) employed at calling in locality, 190; no difference between members and non-members; cash benefits, sickness, $3 per week; death, $500 to $3,000; out of work benefits, dues remitted; body incorporated and registered. President, W. V. Fairbairn, Belleville Station; Corresponding Secretary, R. J. Milne, Belleville Station; meets second and fourth Tuesdays in month.

Name,—Brotherhood of Locomotive Engineers, No. 189. Organized December, 1876; total membership, 68; average earnings per week, $35; average earnings per hour, 39c.; number of working hours first five days, 60; number on Saturday, 12; wages paid monthly; total number (union and non-union) employed at calling in locality, 120; no difference in wages and hours between members and non-members; cash benefits, sickness, $3.50 per week; death, $250 to $2,000; superannuation, $20 per month; out of work benefits, $5 per week; reading-room for use of members; body incorporated and registered. President, William Rogers, Belleville Station; Corresponding Secretary, H. Lavois, Box 34, Belleville Station; meets first and third Sundays in month.

Name,—Brotherhood of Railway Trainmen, No. 108. Organized September 23, 1883; total membership, 128; average earnings per week, $18; average earnings per hour, 24c.; wages paid monthly; average number of days idle per member during year, 10; general cause of idleness, lack of work; total number (union and non-union) employed at calling in locality, 175; no difference between members and non-members; death benefits, $500 to $1,500; body incorporated and registered. President, W. H. Gates, 35 Wayland Ave., Toronto; Corresponding Secretary, W. M. Moise, 328 Foster Ave., Belleville; meets second and fourth Wednesdays in month.

Berlin.

Name,—Journeymen Barbers' International Union, No. 304. Organized April 17, 1911; total membership, 12; average earnings per week, $15; number of working hours first five days, 57½; number on Saturday, 15; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 34; no difference between members and non-members; cash benefits, sickness, $5 per week; death, $75 to $100; body incorporated and registered. President, Otto C. Boll, 26 Queen St. West; Corresponding Secretary, H. G. Hoffman, 53 King St.; meets third Monday in month.

Name,—Boot and Shoe Workers' Union, No. 206. Organized March, 1900; total membership, 54; average earnings per week, male, $10.80; female, $8.50; average earnings per hour, male, 18c.; female, 15c.; number of working hours first five days, 50; number on Saturday, 7½; wages paid fortnightly; average number of days idle per member during year, 18; general cause of idleness, stock-taking and repairs; total number (union and non-union) employed at trade in locality, male, 300; female, 90; no difference between members and non-members; cash benefits, sickness, $6 per week; death, $50 to $100. President, L. B. Albrecht, 102 King St.; Corresponding Secretary, H. W. Oberer, 130 Louisa St.; meets second and fourth Fridays in month.

Name,—Bricklayers', Masons' and Plasterers' International Union, No. 12. Organized March 17, 1900; total membership, 72; average earnings per week, $12; number of working hours first five days, 10; number on Saturday, 8; wages paid fortnightly; average number of days idle per member during year, 160; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 90; difference in wages and hours between members and non-members, 2 hours per day and 15c. per hour; cash benefits, death, $100 to $300. President, J. Tooker, Ahrens St.; Corresponding Secretary, A. W. Johnson, 11 Whitney Place; meets first and third Fridays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 553. Organized 1900; total membership, 40; average earnings per week, $22; average earnings per

hour, 40c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; no idle days; difference in wages between members and non-members, 5c. per hour; death benefit, $200; body incorporated and registered. President, David Mather, Berlin; Corresponding Secretary, H. W. Schneider, 87 Samuel St.; meets first and third Fridays in month.

Name,—Cigarmakers' International Union, No. 422. Organized July 24, 1899; total membership, 24; average earnings per week, $11; average earnings per hour, 25c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly; average number of days idle during year, 30; general cause of idleness, depression in trade; total number (union and non-union) employed at trade in locality, male, 41; female, 4; difference in wages and hours between members and non-members, non-union work 10 hours per day, and receive from $1 to $3 per M. cigars less; cash benefits, sickness, $5 per week; death, $50 to $550; out of work benefits, $5 per week; $40 on death of wife; death benefit less $50 in case of total disability or insanity. President, Paul Steinke, cor. Louisa and St. Leger Sts.; Corresponding Secretary, S. Wslheiser, 22 Troy Street; meets second Tuesday in month.

Name,—International Brotherhood of Electrical Workers (Linemen), No. 535. Organized Feb. 18, 1913; total membership, 25; average earnings per week, $13; average earnings per hour, 22c.; number of working hours first five days, 60; number on Saturday, 9; wages paid weekly; average number of days idle per member during year, 30 to 40; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 20; cash benefits, sickness, $4 per week; death, $100; body incorporated and registered. President, W. E. Mitchell, 247 Mill St.; Corresponding Secretary, P. Krutter, 50 Elgin St.; meets first and third Wednesdays in month.

Name,—Canadian Association of Stationary Engineers, No. 9. Organized May, 1887; average earnings per week, $13.50 to $15; average earnings per hour, 22½c. to 25c.; number of working hours first five days, 50; number on Saturday, 9; wages paid fortnightly; total number (union and non-union) employed at calling in locality, 73; body incorporated. President, J. Luft, Spring St.; Corresponding Secretary, Carl Emmrich, 186 Victoria St.

Name,—Hodcarriers' and Building Labourers' Union, No. 160. Organized 1905; total membership, 35; average earnings per week, $15.36; average earnings per hour, 30c. to 32c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; general cause of idleness. weather conditiions; total number (union and non-union) employed at calling in locality, 35; no difference between members and non-members. President, W. Bendick, 79 King St., W.; Corresponding Secretary, G. Hofmann, 58 Homewood Ave.; meets first and third Wednesdays in month.

Name,—Federated Association of Letter Carriers, No. 20. Organized October 3, 1908; total membership, 12; average earnings per week, $15; average earnings per hour, 25c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 10; no difference in wages and hours between members and non-members. President. C. D. Hamacker, 96 Peter St.; Corresponding Secretary, Ira S. Underwood, 102 Peter St.; meets first Friday in month.

Name.—United Association of Plumbers and Steamfitters, No. 527. Organized Feb. 18, 1911; total membership, 16; average earnings per week, $17.50; average earnings per hour, 35c.; number of working hours first five days, 45; number on

Saturday, 5; wages paid weekly and fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 20; difference in wages between members and non-members, non-members receive from 25c. to 30c. per hour; cash benefits, sickness, $5 per week; death, $100; superannuation, 20 years and under 25, $300; 25 and under 30, $400; 30 and over, $500. President, G. W. Zimmerman, Waterloo; Corresponding Secretary, E. R. Reitz, 57 William St., Berlin; meets first and third Mondays in month.

Name,—Journeymen Tailors' Union, No. 264. Organized 1900; total membership, male, 8; female, 10; average earnings per week, male, $12; female, $7; average earnings per hour, male, 20c.; female, 12½c.; number of working hours first five days, 50; number on Saturday, 10; wages paid weekly; general cause of idleness, slack season; total number (union and non-union) employed at trade in locality, male, 8; female, 10; difference in wages between members and non-members, 10 per cent.; cash benefits, sickness, $5 per week; death, $100; special work for members; body incorporated and registered. President, G. H. Filsinger, 79 Ahrens St. W.; Corresponding Secretary, Miss C. Shoemaker, 70 Weber St. W.; meets first Tuesday in month.

Name,—Upholsterers' International Union, No. 42. Organized December, 1912; total membership, 37; average earnings per week, $12 to $15; average earnings per hour, 20c. to 26c.; number of working hours first five days, 50; number on Saturday, 9; from May to September, 5 hours; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 125; difference in wages and hours between members and non-members, no difference in hours, but about 2c. per hour in wages; have social evenings for members. President, J. W. Wotherspoon, 8 Dill St.; Corresponding Secretary, H. W. Behrend, 55 Francis St.; second and fourth Wednesdays in summer; second and fourth Thursdays in winter.

Blenheim.

Name,—International Brotherhood of Maintenance of Way Employees, No. 502. Organized October, 1907; total membership, 110; average earnings per week, $9.90; average earnings per hour 16½c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality 145; no difference in wages or hours between members and non-members; cash benefits, out of work benefits, assessment levied to assist; body incorporated and registered. President, A. Mansel, Blenheim; Corresponding Secretary, S. Tilley, 48 Park Ave. W., Chatham; meets at call of President.

Brantford.

Name,—Journeymen Barbers' International Union, No. 298. Organized May 28, 1901; total membership, 29; average earnings per week, $13; average earnings per hour, 21c.; number of working hours first five days, 50; number on Saturday, 13½; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 45; all are members of organization; cash benefits, sickness, $5 per week; death, $75 to $500; body incorporated and registered. President, J. Rice, 5 George St.; Corresponding Secretary, Thos. Linscott, 248 Colborne St.; meets last Monday in month.

Name,—Bartenders' International League, No. 182. Total membership, 22; average earnings per week, $15; average earnings per hour, 25c.; number of working

hours first five days, 45; number on Saturday, 10; wages paid weekly and fortnightly; total number (union and non-union) employed at calling in locality, 30; cash benefits, sickness, $3 per week; death, $50; body incorporated and registered. President, H. O'Connell, 106 Market St.; Corresponding Secretary, J. Knight, Kerby House; meets last Sunday in month.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 9. Organized June, 1898; total membership, 107; average earnings per week, $22; average earnings per hour, 50c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly; average number of days idle per member during year, 90; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 110; difference in wages and hours between members and non-members, from 10c. to 15c. per hour; cash benefit, death, $50 to $300. President, T. Parsons, 249 West St.; Corresponding Secretary, A. Fischer, Grand View P.O., Brantford; meets alternate Thursdays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 498. Total membership, 45; average earnings per week, $19.25; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 75; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 200; difference in wages between members and non-members, 2½c. to 5c. per hour; cash benefits, sickness, $5 per week; death, $200; disability, $100 to $400. President, A. G. Brown, Grand View P.O.; Corresponding Secretary, Chas. Packham, 308 Sheridan St.; meets second and fourth Tuesdays in month.

Name,—Canadian Association Stationary Engineers, No. 4. Organized June 27, 1889; total membership, 4; average earnings per week, $12; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly and fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 35; no difference in wages or hours between members and non-members; body incorporated and registered. President, Arthur Ames, 159 Chatham St.; Corresponding Secretary, Joseph Ogle, 73 Richmond St.; meets second and fourth Fridays in month.

Name,—International Association of Machinists, No. 607. Organized January, 1912; total membership, 19; average earnings per week, $16; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 9 and 5; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 200. President, V. R. Grotan, 228 Dalhousie St.; Corresponding Secretary, J. Hanhe; meets second and fourth Wednesdays in month.

Name,—American Federation of Musicians, No. 467. Organized December, 1907; total membership, male, 97; female, 2. President, John McHutchison, 9 Grey St.; Corresponding Secretary, E. C. Duval, 103 Wellington St.; meets first Sunday in month.

Name,—Operative Plasterers' International Association, No. 164. Organized 1900; total membership, 14; average earnings per week, $22.50; average earnings per hour, 45c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 90; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 28; no difference in wages or hours between members and non-members; cash benefits, death, $50 to $200; body incorporated and registered. President, H. Ramsbottom, 56 Brighton Road; Cor-

responding Secretary, H. Perrin, 7 Holmes St.; meets alternate Thursdays in month.

Name,—Journeymen Stonecutters' Association of North America. Organized May 8, 1912; total membership, 12; average earnings per week, $15; average earnings per hour, 30c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly; average number of days idle per member during year, 90; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 12; all are members of organization; death benefit, $150; body incorporated and registered. President, Robert Liston, General Delivery; Corresponding Secretary, Wm. Fairley, 33 Albany St.; meets second and fourth Thursdays in month.

Name,—International Typographical Union, No. 378. Organized June, 1900; total membership, male, 32; female, 1; average earnings per week, male, $16.50; female, $16.50; average earnings per hour, male, 32c.; female, 32c.; number of working hours first five days, 42½; number on Saturday, 5½; wages paid weekly; total number (union and non-union) employed at trade in locality, male 35; female, 4; cash benefits, death, $75 to $400; superannuation, $5 per week. President, G. A. Moore, Jarvis St.; Corresponding Secretary, Ira D. Scruton, 24 Wells Ave.; meets fourth Wednesday in month.

Bridgeburg.

Name,—Brotherhood of Railway Carmen, No. 542. Total membership, 60; average earnings per week, $14; average earnings per hour, 19c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 60; cash benefits, sickness, 50c. per day; death, amount of insurance; superannuation at 65 if you have worked 25 years. Corresponding Secretary, A. Merryweather, Bridgeburg.

Name,—United Brotherhood of Carpenters and Joiners. Organized July 3, 1911; total membership, 35; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly; body incorporated. President, J. Malcolm. Amagari; Corresponding Secretary, A. Shirk, Bridgeburg; meets first and third Mondays in month.

Name,—Brotherhood of Locomotive Engineers, No. 679. Organized May 24, 1905; total membership, 28; average earnings per week, $32.76; average earnings per hour, 39c.; number of working hours first five days, 60; number on Saturday, 12; wages paid monthly; no idle days; no difference in wages or hours between members and non-members; cash benefits, death, $750 to $4,500; body incorporated and registered. President, Richard Walsh, 411 Dearborn St., Buffalo, N.Y.; Corresponding Secretary, M. R. Harvey, Bridgeburg, Ont.; meets first Wednesday and third Tuesday in month.

Name,—Brotherhood of Railway Trainmen, No. 713. Organized July 3, 1903; total membership, 91; average earnings per week, $35; average earnings per hour, 37c.; number of working hours first five days, 55; number on Saturday, 11; work Sundays; wages paid monthly; no difference between members and non-members; cash benefits, death, $500 to $2,000; superannuation after 70; body incorporated and registered. President, F. Finlayson, Bridgeburg; Corresponding Secretary, G. Smith, Central Ave.; meets first and third Tuesday in month.

BROCKVILLE.

Name,—Journeymen Barbers' International Union, No. 387. Organized March 26, 1902; total membership, 18; average earnings per week, $12; number of working hours first five days, 60; number on Saturday, 15; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 21; cash benefits, sickness, $5 per week; death, $75 to $500. President, W. F. Amond, 112 King St. West; Corresponding Secretary, F. J. Clutterbuck, 7 King St. West; meets last Monday in month.

Name,—Cigarmakers' International Union, No. 411. Organized 1903; total membership, male, 6; female, 2; average earnings per week, male, $12; female, $12; average earnings per hour, male, 27c.; female, 27c.; number of working hours first five days, 40; number on Saturday, 5; wages paid weekly; total number (union and non-union) employed at trade in locality, male, 9; female, 6; difference between members and non-members; non-members 45 per cent. lower than members; cash benefits, sickness, $5 per week; death, from $50 to $550; out of work benefits, $3 per week; loan to travel to nearest union. President, H. Belmont, Brockville; Corresponding Secretary, Jas. E. Grantham, Brockville.

Name,—Order of Railway Conductors, No. 366. Organized March 1, 1891; total membership, 23; average earnings per week, $15; wages paid monthly; total number (union and non-union) employed at calling in locality, 250; no difference between members and non-members; cash benefits, sickness, $3 per week; death $250 to $2,000; body incorporated and registered. President, R. A. Dickson, Brockville; Corresponding Secretary, Geo. Graham, 121 Pearl St.; meets first and second Mondays in month.

Name,—Brotherhood Locomotive Firemen and Enginemen (Island City), No. 69. Organized August, 1881; total membership, 54; average earnings per week, $17; average earnings per hour, 20c.; wages paid monthly; no idle days; no difference in wages or hours between members and non-members; body incorporated. President, C. W. Buell; Corresponding Secretary, F. C Race, 19 Farm St.; meets every Thursday in month.

Name,—Brotherhood of Locomotive Engineers, No. 118. Organized 1868; total membership, 49; average earnings per week, mileage basis; average earnings per hour, mileage basis; number of working hours first five days, 25 to 50; number on Saturday, 5 to 10; wages paid monthly; total number (union and non-union) employed at calling in locality, 49; no difference between members and non-members; cash benefits, sickness, $3 per week from company and same from Order. President, E. Mortimer, 28 Charles St.; Corresponding Secretary, R. Wardrop, 39 Daniel St.; meets Tuesdays in month.

Name,—International Moulders' Union, No. 320. Organized Oct. 28, 1909; total membership, 8; average earnings per week, $15; average earnings per hour, 27c.; number of working hours first five days, 45; number on Saturday, 8; wages paid fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 75; no difference between members and non-members; cash benefits, sickness, $5 per week; death, $250; out of work benefits, $7 per week; body incorporated and registered. President, John Monahan, 24 Jessie St.; Corresponding Secretary, C. J. Gauthier, 1 Park St.; meets second and fourth Tuesdays in month.

Name,—Journeymen Tailors' Union of America, No. 262. Organized 1901; total membership, male, 11; female, 9; average earnings per week, male, $10;

female, $7 to $8; average earnings per hour, male, 17c.; female, 12c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly; average number of days idle per member during year, 30; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, male 14; female, 12; difference between members and non-members, 15 to 20 per cent.; cash benefits, sickness, $5 per week; death, $100; body incorporated and registered. President, E. Enright, Church St.; Corresponding Secretary, A. S. Hamilton, 24 John St.; meets first Monday in month.

Name,—Brotherhood of Railway Trainmen, No. 208. Organized Sept. 1887; total membership, 125; average earnings per week, $20; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 130; no difference between members and non-members; death benefit, amount of policy held; body incorporated and registered. President, H. Walter, 55 Pearl St. W.; Corresponding Secretary, W. C. Barkley, 43 Pearl St. W.; meets first and third Sundays in month.

Carleton Place.

Name,—Brotherhood of Railway Carmen, No. 229. Organized Jan. 6, 1903; total membership, 12; average earnings per week, $12.50; average earnings per hour, 25c.; number of working hours first five days, 45; number on Saturday, 5; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 15; no difference between members and non-members. President, T. Carson, Carleton Place; Corresponding Secretary, R. D. New, Box 341, Carleton Place; meets fourth Thursday in month.

Name,—International Brotherhood Blacksmiths and Helpers, No. 424. Organized September, 1903; total membership, 12; average earnings per week, $10.50 to $16.00; average earnings per hour, 21c. to 32c.; number of working hours first five days, 45; number on Saturday, 5; wages paid monthly; average number of days idle during year, 10; total number (union and non-union employed at trade in locality, 20; President, S. Hale, Carleton Place; Corresponding Secretary, R. G. Curtis, Box 224, Carleton Place; meets fourth Saturday in month.

Name,—International Association of Machinists, No. 211. Organized 1899; total membership, 62; average earnings per week, $16.50; average earnings per hour, 33c.; number of working hours first five days, 45; number on Saturday, 5; wages paid monthly; total number (union and non-union) employed at trade in locality, 68; no difference in wages and hours between members and non-members; cash benefits, sickness, dues remitted; death, $75 to $250; out of work benefits, dues remitted; special instruction on steam, etc.; for members. President, J. M. Crawford, Carleton Place; Corresponding Secretary, J. H. McFadden, Box 326, Carleton Place; meets second and fourth Thursdays in month.

Name,—International Moulders' Union, No. 362. Organized May 10, 1900; total membership, 23; average earnings per week, $16.50; average earnings per hour, 29c.; number of working hours first five days, 47½; number on Saturday, 9½, wages paid fortnightly; general cause of idleness, stock taking; total number (union and non-union) employed at trade in locality, 23; no difference in wages and hours between members and non-members; cash benefits, sickness, $5.40 per week; death, $100 to $200; out of work benefits, dues remitted.

President, G. Murray, Carleton Place: Corresponding Secretary, J. J. Carson, Box 292, Carleton Place; meets third Thursday in month.

Name,—Metal Polishers', Buffers', Platers', and Brass Workers' International Union, No. 96. Organized March 1, 1909; total membership, 11; average earnings per week, $18 to $20; average earnings per hour, 30c. to 33c.; number of working hours first five days, 50; number on Saturday, 10; wages paid fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 13; no difference in wages and hours between members and non-members; cash benefits, death, $50 to $200; out of work benefits, dues remitted; body incorporated. President, M. Saunders, Box 301, Carleton Place; Corresponding Secretary, A. P. Williamson, Box 168, Carleton Place; meets first and third Thursdays in month.

Name,—Stove Mounters' International Union, No. 78. Organized April 24, 1905; total membership, 7; average earnings per week, $18; average earnings per hour, 30c.; number of working hours first five days, 50; number on Saturday, 10; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 20; no difference between members and non-members; death benefits, $100. President, C. E. Morphy, Charles St.; Corresponding Secretary, P. H. Thompson, Charles St.; meets second and fourth Thursdays in month.

Chapleau.

Name,—Brotherhood of Railway Carmen, No. 378. Organized Oct. 26, 1912; total membership, 25; average earnings per week, $17; average earnings per hour, 22c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 25; all are members of organization; body incorporated and registered. President, W. Westerman, Chapleau; Corresponding Secretary, Alex. Bennett, Chapleau, meets 23rd of each month.

Name,—Order of Railway Conductors, No. 315. Organized 1865; total membership, 35; average earnings per week, $30; average earnings per hour, 37c.; number of working hours first five days, irregular; number on Saturday, irregular; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 35; body incorporated and registered. President, A. B. Garetson, Cedar Rapids, Iowa, U.S.A.; meets every Tuesday in month.

Name,—Brotherhood of Locomotive Engineers, Div. No. 319. Organized Oct. 2, 1886; total membership, 71; average earnings per week, mileage basis: wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 120; no difference in wages or hours between members and non-members; cash benefits, death, insurance; body incorporated and registered. President, P. Downey, Chapleau; Corresponding Secretary, B. Warner, Box 158, Chapleau; meets every Monday at 2 p.m.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 321. Organized 1886; total membership, 81; average earnings per week, mileage basis; average earnings per hour, mileage basis; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 81; no difference between members and non-members; cash benefits, accident policy; death, amount of insurance; body incorporated and registered. President, Wm.

Card, Chapleau; Corresponding Secretary, S. Kruger, Box 118, Chapleau: meets every Wednesday in month.

Name,—International Association of Machinists, No. 535. Organized 1902; total membership, 20 to 30; average earnings per week, varies; average earnings per hour, 39c.; number of working hours first five days, 50; number on Saturday, 10; Sundays, 10; wages paid monthly; average number of days idle per member during year, 14; general cause of idleness, holidays: total number (union and non-union) employed at trade in locality, 20 to 30; no difference in wages and hours between members and non-members; cash benefits, death, $50 to $500; out of work benefits, dues remitted; body registered. President, J. Carmichael, Box 8; Corresponding Secretary, V. Beardmore, Box 57; meets second and fourth Wednesdays in month.

Name,—Brotherhood of Railway Trainmen, No. 246. Organized 1888; total membership, 140; average earnings per week, $18; average earnings per hour, 24c.; number of working hours first five days, varies: number on Saturday, varies; wages paid monthly; total number (union and non-union) employed at calling in locality, 250; no difference between members and non-members; death benefit, amount of insurance; body incorporated and registered. President, E. J. Mitchell, Chapleau; Corresponding Secretary, D. Matheson, Chapleau; meets Thursdays.

Chatham.

Name,—American Federation of Musicians, No. 629. Organized Dec. 1, 1912; total membership, 14; average earnings per week, $10; average earnings per hour, 90c.; number of working hours first five days, 20; number on Saturday, 5; wages paid weekly; no idle days: total number (union and non-union) employed at calling in locality, 35; difference in wages between members and non-members, about 40c. per hour. President, E. W. Braddon, 123 William St. N.; Corresponding Secretary, F. W. Phelps, 41 Grey St.; meets at call of President.

Name,—International Typographical Union, No. 421. Organized Nov., 1909; total membership, 15; average earnings per week, $13; average earnings per hour, 28c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 25; no difference in wages and hours between members and non-members; cash benefits, death, $75 to $400: superannuation, $5 per week; body incorporated and registered. President, G. E. Morrell, St. Clair St.; Corresponding Secretary, A. Riddell, Box 382, Chatham: meets first Monday in month.

Cobalt.

Name,—Western Federation of Miners, No. 146. Organized March 24, 1906; total membership, 1,200; average earnings per week, $19: average earnings per hour, 35c.; number of working hours first five days, 45; number on Saturday, 9; wages paid monthly; total number (union and non-union) employed at calling in locality, 3,000; no difference between members and non-members; cash benefits, sickness, $7 per week; death, $50. President, T. Duncan, Box 446, Cobalt; Corresponding Secretary, J. Gorman, Box 446, Cobalt; meets Sunday afternoon at 2 p.m.

Name,—Order of Railway Telegraphers, No. 99. Total membership, 57; average earnings per week, $18 to $19; average earnings per hour, 23c. to 24c.;

number of working hours first five days, 60; number on Saturday, 12; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 62; no difference in wages and hours between members and non-members; body incorporated and registered. Corresponding Secretary, T. J. Baker, Diver; meets second Sunday in month.

COATSWORTH.

Name,—Order Railway Telegraphers, Div. No. 43. Total membership, 40; average earnings per week, $15; average earnings per hour, 21c.; number of working hours first five days, 60; number on Saturday, 12; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 45; no difference between members and non-members; cash benefits, death, $300 to $1,000; body incorporated. President, H. B. Perham, Star Building, St. Louis, Mo.; Corresponding Secretary, L. W. Quick, Star Building, St Louis, Mo.; meets at call of Chair.

COLLINGWOOD.

Name,—Journeymen Barbers' International Union, No. 528. Organized May 23, 1903; total membership, 8; average earnings per week, $12; average earnings per hour, 20c.; number of working hours first five days, 50; number on Saturday, 16; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 16; no difference between members and non-members; cash benefits, sickness, $5 per week; death, $75 to $500. President, L. Fryer, Collingwood Post Office; Corresponding Secretary, F. Bollen, Box 536, Collingwood; meets first and third Mondays in month.

Name,—Bricklayers' and Masons' International Union, No. 19. Organized Sept. 19, 1902; total membership, 8; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; average number of days idle per member during year, 175 to 200; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 15; difference in wages and hours between members and non-members, non-members receive from $2 to $3 for 10 hours' work; death benefits, $100 to $300. President, J. Gilham, Box 777, Collingwood; Corresponding Secretary, W. Court, Box 797 Collingwood; meets third Wednesday in month.

Name,—Amalgamated Society of Carpenters and Joiners Organized June 4, 1860; total membership, 9; average earnings per week, $16; average earnings per hour, 27½c.; number of working hours first five days, 50; number on Saturday, 9; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 60; difference in wages or hours between members and non-members, non-members receive 5c. to 10c. per hour less than members; cash benefits, sickness, $3 per week; death, $60; member's wife, $25; superannuation, $2 per week at 60; out of work benefits, $2.50 per week; body incorporated and registered. President, S. Brooks, Market St.; Corresponding Secretary, R. Fleetham, 122 First St.; meets Mondays.

Name,—Amalgamated Society of Engineers, No. 746. Organized 1856; total membership, 25; average earnings per week, $16.35; average earnings per hour, 28c.; number of working hours first five days, 50; number on Saturday, 5; total number (union and non-union) employed at trade in locality, 54; no difference between members and non-members; cash benefits, sickness, $2.50 per week; super-

annuation, $2.50 per week; out-of-work benefits, $2.50 per week; body incorporated and registered. President, Thomas Kelly, Box 697 Collingwood; Corresponding Secretary, Nicholas Robinson, Box 877, Collingwood; meets first and third Saturdays in month.

Name,—Labourers' Protective Union, No. 14,106. Organized Sept. 8, 1911; total membership, 25; average earnings per week, $12; average earnings per hour, 25c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; average number of days idle per member during year, 150; general cause of idleness, weather conditions; total number (union and non-union) employed at calling in locality, 50; difference in wages between members and non-members, members 25c. per hour; non-members 17½ to 20c. per hour; cash benefits, death, $100; strikes and lock-outs $6 per week. President, R. McGinnie, Robinson St.; Corresponding Secretary, R. Boyce, Spruce st.; meets second and fourth Fridays in month.

Name,—International Longshoremens' Association, No. 476. Organized March, 1912; total membership, 10; average earnings per hour, 30c.; wages paid when job completed; general cause of idleness, close of navigation; total number (union and non-union) employed at calling in locality, 10; President, W. C. Nutt; Corresponding Secretary, F. Myrtle, Berch St.; meets first and third Thursdays in month.

Name,—International Association of Machinists, No. 627. Organized Oct. 6, 1903; total membership, 20; average earnings per week, $16.50; average earnings per hour, 27½c.; number of working hours first five days, 50; number on Saturday, 9; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 50; no difference between members and non-members; death benefits, $50 to $200. President, N. Veitch, Box 917, Collingwood; Corresponding Secretary, T. P. Robinson, Box 951, Collingwood; meets second and fourth Wednesdays in month.

Cordova.

Name,—Western Federation of Miners, No. 147. Organized Oct. 21, 1912; total membership, 91; average earnings per week, $14.25; average earnings per hour, 23¾c.; number of working hours first five days, 50; number on Saturday, 9; wages paid monthly; total number (union and non-union) employed at calling in locality, 144; cash benefits, sickness, $7 per week; death, $50; body incorporated and registered. President, D. McCurdy, Sr., Cordova Mines; Corresponding Secretary, John H. Young, Cordova Mines; meets first and second Sundays and second and last Mondays in month.

Deseronto.

Name,—Order of Railway Telegraphers, No. 43. Organized Dec. 19, 1910; total membership, 21; average earnings per week, $10; average earnings per hour, 14c.; number of working hours first five days, 60; number on Saturday, 12; wages paid monthly; total number (union and non-union) employed at calling in locality, male, 23; female, 2; no difference in wages and hours between members and non-members; cash benefits, death, $250; President, W. R. Thomas, Deseronto; Corresponding Secretary, J. R. McLean, Sydenham; no set time of meeting.

Dundas.

Name,—International Moulders' Union, No. 269. Organized Feb. 27, 1900; total membership, 43; average earnings per week, $17.50; average earnings per hour, 32½c.; number of working hours first five days, 50; number on Saturday, 5; wages paid fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 43; all are members of organization; cash benefits, sickness, $5.40 per week; death, $100 to $200. President, J. Falconer, Dundas; Corresponding Secretary, M. J. Dunn, Box 117, Dundas; meets third Monday in month.

Elk Lake.

Name,—Western Federation of Minors, No. 140. Organized May 12, 1906; total membership, 83; average earnings per week, $18; average earnings per hour, 33¼c.; number of working hours first five days, 45; number on Saturday, 9; wages paid monthly; total number (union and non-union) employed at calling in locality, 125; no difference between members and non-members; cash benefits, sickness, $7 per week; death, $50; body registered. President, W. H. McCauley, Box 348, Elk Lake; Corresponding Secretary, R. Camprie, Box 348, Elk Lake; meets Sunday.

Fort William.

Name,—Journeymen Barbers' International Union, No. 549. Total membership, 30; average earnings per week, $18; average earnings per hour, 30c.; number of working hours first five days, 40; number on Saturday, 8 to 11; wages paid weekly; total number (union and non-union) employed at trade in locality, 50; no difference between members and non-members; cash benefits, sickness, $5 week; death, $100. President, Amos McWilliams, 118 North Harold St.; Corresponding Secretary, R. D. Yorke, 118 North Harold St.; meets second and fourth Mondays in month.

Name,—Bartenders' International League, No. 761. Organized Jan. 3rd, 1906; total membership, 52; average earnings per week, $18; average earnings per hour, 35c.; number of working hours first five days, 35; number on Saturday, 6; Wages paid monthly; total number (union and non-union) employed at calling in locality, 52; cash benefits, sickness, $5 per week; death, $50; body incorporated and registered. President, J. Harris, Ogden Hotel; Corresponding Secretary, R. Carson, 215 Bethune St.; meets first and third Sundays in month.

Name,—International Brotherhood of Boiler Makers and Iron Ship Builders and Helpers, No. 505. Organized Sept. 11, 1907; total membership, 20; average earnings per week, $22; average earnings per hour; 44c.; number of working hours first five days, 45; number on Saturday, 5; wages paid monthly; average number of days idle per member during year, 30; general cause of idleness, reduction of expenses; total number (union and non-union) employed at trade in locality, 70; difference in wages and hours between members and non-members, non-members work 60 hours a week and receive from 30c. to 35c. per hour; cash benefits, death, $100 to $300; out of work benefits, dues remitted; body incorporated and registered. President, I. Hunter, 213 Frederica St.: Corresponding Secretary, F. Stafford, 420 Mary St.; meets first and third Fridays in month.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 25, Organized 1904; total membership, 85; average earnings per week, $18; average earnings per hour, 62½c.; number of working hours first five days, 45; number on

Saturday, 9; wages paid fortnightly; average number of days idle per member during year, 140; general cause of idleness, slackness of work; total number (union and non-union) employed at trade in locality, 85; cash benefits, death, $150 to $300; body incorporated and registered. President, W. Drew, 39 Catherine St.; Corresponding Secretary, F. Robinson, 108 Empire Ave., Port Arthur; meets second and fourth Mondays in month.

Name,—International Association of Bridge and Structural Iron Workers, No. 53. Organized Jan. 17, 1903; total membership, 50; average earnings per week, $23; average earnings per hours, 50c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; average number of days idle per member during year, 200; general cause of idleness, no work; total number (union and non-union) employed at trade in locality, about 75 or 100; difference in wages and hours between members and non-members, non-members works 10 hours per day and receive from 30c. to 35c. per hour: cash benefits, sickness, $5 per week; death, $100; superannuation, $5 per week. President, D. McNeil, Box 182, Fort William; Corresponding Secretary, R. Young, Box 182, Fort William; meets first and third Friday in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 878. Organized June, 1860. total membership, 32; average earnings per week. $27; average earnings per hour, 45c. to 50c.; number of working hours first five days, 45 to 50; number on Saturday, 9 to 10; wages paid fortnightly; average number of days idle per member during year, 50; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 300; no difference between members and non-members; cash benefits, sickness, $2.25 to $3 per week; death, $60; superannuation, $27 per year; out of work benefits, $1.75 per week. President, J. E. Daley, Box 411, Fort William; Corresponding Secretary, G. H. Dutton, 407 Vickers St.; meets first and third Mondays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 1,498. Organized March 16, 1903; total membership, 94; average earnings per week, $27; average earnings per hour, 45c.; number of working hours first five days, 50; number on Saturday, 10; wages paid fortnightly; average number of days idle per member during year, 90; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 360; difference in wages between members and non-members, 5c. to 10c. per hour; death benefit, $200; body incorporated and registered. President, J. Smith, 227 Pruden St.; Corresponding Secretary, W. E. Cresdee, 110, South Harold St.; meets first and third Tuesdays in month.

Name,—Order of Railway Conductors, No. 286. Organized 1891; total membershiip, 42; average earnings per week, $40; average earnings per hour, 45c.; wages paid monthly; all are members of organization; cash benefits, death, $1,000 to $3,000; body incorporated and registered. President, A. A. Blennerhasseld, 1201 Victoria Ave.; Corresponding Secretary, A. B. Marcotte, 439 Wiley St.; meets second and fourth Sundays in month.

Name,—Brotherhood of Locomotive Engineers, No. 243. Organized 1882; total membership, 57; average earnings, per week, $35; average earnings per hour, 50c.; number of working hours first five days, mileage basis; number on Saturday, mileage basis; wages paid monthly; total number (union and non-union) employed at calling in locality, 75; no difference between members and non-members; death benefits, amount of insurance; body incorporated and registered. President, H. Mills, 231 Pruden St.; Corresponding Secretary, W. G. Smyth, 407 Prince Arthur Boulevard; meets second and fourth Tuesdays in month.

Name,—Brotherhood of Locomotive Engineers, No. 654. Organized March, 1912; total membership, 35; average earnings per week, $40; average earnings per hour, mileage basis; wages paid monthly; general cause of idleness, waiting traffic; total number (union and non-union) employed at calling in locality, 42; no difference between members and non-members; body incorporated and registered. President, D. Anderson, 1317 Donald St.; Corresponding Secretary, J. Stothers, 1201 Edward St.; meets second and fourth Mondays in month.

Name,—International Union of Steam and Operating Engineers, No. 298. Organized, May, 1905; total membership, 50; average earnings per week, $24; average earnings per hour, 40c.; number of working hours first five days, 50, number on Saturday, 10; wages paid fortnightly; average number of days idle per member during year, 60; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 65; difference in wages and hours between members and non-members, non-members receive 10c. per hour less than members; no difference in hours. President, W. H. Downing, 28 Ontario St., Port Arthur; Corresponding Secretary, Wm. Gunby, 110 Harold St., Fort William; meets first and third Wednesdays in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 225. Organized December 1, 1873; total membership, 96; average earnings per week, $20; average earnings per hour, 25c.; number of working hours first five days, mileage basis; number on Saturday, mileage basis; wages paid monthly; general cause of idleness, slack business; total number (union and non-union) employed at calling in locality, 100; no difference between members and non-members; death benefits, amount of insurance; body incorporated and registered. President, T. R. Elliott, 308 Finlayson St.; Corresponding Secretary, P. Dargavel, 624 Wiley St.; meets second and fourth Wednesdays in month.

Name,—International Longshoremen's Association (Grain Trimmers), No. 479. Organized April 10, 1903; total membership, 48; average earnings per week, $22; wages paid weekly; average number of days idle per member during year, 160; general cause of idleness, close of navigation; total number (union and non-union) employed at calling in locality, 70; difference in wages between members and non-members, 10c. per hour. President, W. Houston, 223 Brodie St. S.; Corresponding Secretary, C. McLean, 621 Prince Arthur Boulevard; meets first Wednesday in month.

Name,—International Longshoremen's Association (Coal Handlers), No. 746. Total membership, 140; average earnings per hour, 27½c. to 37½c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; general cause of idleness, no coal cars; total number (union and non-union) employed at calling in locality, about 400; no difference in wages and hours between members and non-members; body incorporated and registered. President, N. Domenico, 539 McLauchlin St.; Corresponding Secretary, A. Jarratt, 739 Simpson St.; meets at call of President.

Name,—International Association of Machinists, No. 309. Total membership, 93; average earnings per hour, 45½c.; number of working hours first five days, 45; number on Saturday, 5; wages paid monthly; general cause of idleness, reduction of expenses; difference in wages and hours between members and non-members, 5c. to 10c. per hour; cash benefits, death, $50 to $250. President, W. Jackson, 305 Brodee St. N.; Corresponding Secretary, H. Stafford, 133 Heron St.; meets second and fourth Tuesdays in month.

Name,—International Brotherhood of Maintenance of Ways Employees, No.

128. Organized 1902; total membership, 150; average earnings per week, $13.50; average earnings per hour, 20½c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; total number (union and non-union) employed at calling in locality, varies. President, E. Erickson, 1313 Edward St.; Corresponding Secretary, A. Rowe, Box 395, Fort William; meets fourth Saturday in month.

Name,—International Moulders' Union, No. 429. Organized Sept. 28, 1906; total membership, 24; average earnings per week, $18; average earnings per hour, 30c.; number of working hours first five days, 50; number on Saturday, 9; wages paid fortnightly; general cause of idleness, sickness; total number (union and non-union) employed at trade in locality, 84; no difference in wages or hours between members and non-members; cash benefits, sickness, $5.40 per week; death, $100 to $200; out of work benefits, dues remitted; body incorporated and registered. President, T. Morris, 115½ East Frederica; Corresponding Secretary, W. Newman, 806 Northern Ave.; meets first and third Wednesdays in month.

Name,—Operative Plasterers' International Association, No. 344. Organized 1905; total membership, 25; average earnings per week, $30; average earnings per hour, 60c.; number of working hours first five days, 45; number on Saturday, 5 in summer; wages paid fortnightly; no difference between members and non-members; death benefits, $50 to $200. President, C. Roler, Port Arthur; Corresponding Secretary, F. Phillips, John St., Fort William; meets second and fourth Fridays in month.

Name,—United Association of Plumbers, Gas Fitters, etc., No. 257. Organized July 14, 1910; total membership, 24; average earnings per week, $26.95; average earnings per hour, 55c.; number of working hours first five days, 45; number on Saturday, 4; wages paid weekly and fortnightly; average number of days idle per member during year, 90; general cause of idleness, depression in trade; total number (union and non-union) employed at trade in locality, 25; no difference in wages and hours between members and non-members; cash benefits, sickness, $5 per week; death, $100; out of work benefits, dues remitted. President, J. Dexley, 504 John St. N.; Corresponding Secretary, J. Lawrence, 108 Norah St. N.; meets every second Thursday in month.

Name,—Brotherhood of Railway Trainmen, No. 306. Organized Sept. 23, 1883; total membership, 180; average earnings per week, $30 to $45; average earnings per hour, 28c. to 41c.; number of working hours first five days, mileage basis; number on Saturday, mileage basis; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 200; no difference in wages or hours between members and non-members; cash benefits, death, $1,500; body incorporated and registered. President, J. D. Firth, 112 Pruden St.; Corresponding Secretary, Fred. Hutchins, 307 Finlayson St.; meets first and third Sundays in month.

Name,—International Typographical Union, No. 417. Organized June 15, 1905; total membership, 23; average earnings per week, $21; average earnings per hour, 44¾c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 23; all are members of organization; cash benefits, death, $75 to $400; superannuation, $5 per week; body incorporated and registered. President, D. Ross, 219 Norah St. S.; Corresponding Secretary, G. E. Carter, 134 Franklin St. N.; meets first Saturday in month.

GALT.

Name,—Journeymen Barbers' International Union, No. 413. Organized Aug. 12, 1902; total membership, 17; average earnings per week, $12 to $14; average earnings per hour, 18c. to 22c.; number of working hours first five days, 50; number on Saturday, 15; wages paid weekly; cash benefits, sickness, $5 per week; death, $25 to $500. President, A. Wison South Water St.; Corresponding Secretary, J. R. Soutan, Box 174 North Water St.; meets last Thursday in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 1216. Organized July 21, 1902; total membership, 65; average earnings per week, $17.50; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly and fortnightly; average number of days idle per member during year, 60; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 90; difference in wages and hours between members and non-members, 5c. to 10c. per hour; death benefits, $100 to $200; body incorporated and registered. President, A. Henderson, 23 Pollock Ave.; Corresponding Secretary, R. Cavers, Shade St.; meets first and third Mondays in month.

Name,—Bricklayers', Masons' and Plasterers' International Union, No. 15. Organized June 1, 1901; total membership, 67; average earnings per week, $21.60; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly and fortnightly; average number of days idle per member during year, 125; general cause of idleness, weather conditions and want of material; total number (union and non-union) employed at trade in locality, 97; difference in wages and hours between members and non-members, non-members work 9 hours per day; cash benefits, death, $50 to $300; body incorporated and registered. President, M. J. Haller, Post Office, Preston; Corresponding Secretary, W. R. Johnston, Box 208, Hespeler; meets first and third Wednesdays in month.

Name,—Federated Association of Letter Carriers, No. 39. Organized Nov. 18, 1912; total membership, 7; average earnings per week, $13.50; number of working hours first five days, 40 to 45; number on Saturday, 8; wages paid fortnightly; total number (union and non-union) employed at calling in locality, 9; no difference between members and non-members. President, J. Spooner, 91 South St.; Corresponding Secretary, H. Mills, 27 Lowell St.; meets first of month.

Name,—International Moulders' Union, No. 447. Organized May 7, 1903; total membership, 130; average earnings per week, $15; average earnings per hour, 27c.; number of working hours first five days, 50; number on Saturday, 5; wages paid fortnightly; average number of days idle per member during year, 25; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, 175; no difference in wages or hours between members and non-members; cash benefits, sickness, $5.40 per week; death, $100 to $200; out of work benefits, dues remitted. President, J. Cook, New Royal Hotel; Corresponding Secretary, D. Melvin, 107 Main St. W.; meets first and third Thursdays in month.

Name,—American Federation of Musicians, No. 124. Organized April 8, 1907; total membership, male, 68; female, 3; average earnings per hour, male, 35c.; female, 35c.; number of working hours first five days, 35; number on Saturday, 11; total number (union and non-union) employed at calling in locality, male, 75; female, 10; all are members of organization; body registered. President, Wm.

Ewart, 30 Rich Ave.; Corresponding Secretary, L. B. Schwartz, 66 Water St.; meets first Sunday in month.

Name,—Brotherhood of Painters, Decorators and Paperhangers, No. 906. Total membership, 11; average earnings per week, $14.85; average earnings per hour, 27c.; number of working hours first five days, 50; number on Saturday, 5; total number (union and non-union) employed at trade in locality, 11; body incorporated. President, W. Thomson, 13 Harris St.; Corresponding Secretary, C. Evans, 49 Cedar St.; meets second and fourth Thursdays in month.

Gananoque.

Name,—International Union of Paving Cutters. Total membership, 20; average earnings per week, $18; average earnings per hour, 37½c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 20; all are members of organization; death benefit, $100; body incorporated. President, Thomas Underwood, Gananoque; Corresponding Secretary, Joseph Round, Box 186, Gananoque.

Graham.

Name,— Brotherhood of Railway Carmen (Frenchman's Head), No. 28. Organized Nov. 7, 1911; total membership, 25; average earnings per week, $18; average earnings per hour, 28c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 27; no difference between members and non-members; body incorporated and registered. President, B. Wilson, Sioux-Lookout P.O.; Corresponding Secretary, A. Vass, Box 101, Sioux-Lookout; meets third Saturday in month.

Guelph.

Name,—Bakers and Confectioners, No. 95 (C.F.L.). Organized March 1, 1913; total membership, 11; average earnings per week, $16.50; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 16; wages paid weekly; total number (union and non-union) employed at trade in locality, 20; no difference between members and non-members. President, Wm. Brown, 20 Fergus St.; Corresponding Secretary, C. T. Moore, 41 Cork St.; meets last Saturday in month.

Name,—Journeymen Barbers' International Union, No. 310. Organized 1904; total membership, 20; average earnings per week, $12; number of working hours first five days, 50; number on Saturdays, 13; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 20; cash benefits, sickness, $5 per week; death, $50 to $500; body incorporated and registered. Corresponding Secretary, F. H. Nosehay, Albay Road, Guelph; meets last Monday in month.

Name,—Bartenders' International League, No. 104. Organized Oct. 13, 1901; total membership, 31; average earnings per week, $17; average earnings per hour, 24c. number of working hours first five days, 60; number on Saturday, 10; wages paid weekly and monthly; no idle days; total number (union and non-union) employed at calling in locality, 40; difference in wages between members and non-

members, $4 per week; death benefits, $50. President, W. Maloney, American Hotel; Corresponding Secretary, F. Smith, Priory Hotel; meets first Friday in month.

Name,—Bricklayers', Masons' and Plasterers' International Union, No. 3. Organized June, 1882; total membership, 69; average earnings per hour, 50c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly and fortnightly; average number of days idle per member during year, 100; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 69; all are members of organization; cash benefits, death, $100 to $300; in winter hall is always open for members. President, H. Cate, Queen St.; Corresponding Secretary, J. Weekes, 9 Galt St.; meets second and fourth Thursdays in month.

Name,—Federated Association of Letter Carriers, No. 18. Organized August, 1908; total membership, 13; average earnings per week, $13.50; average earnings per hour, 28c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 13; all are members of organization; body incorporated and registered. President, H. E. Winters, 34 Durham St.; Corresponding Secretary, R. Masson, 56 St. Arnaud St.; meets at call of President.

Name,—Metal Polisher's, Buffers', Platers' and Brass Workers' International Union, No. 56. Organized September, 1910; total membership, 8; average earnings per week, $19; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 9; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 20; no difference in wages and hours between members and non-members; cash benefits, death, $50. President, R. Bolton, Wellington St.; Corresponding Secretary, R. Mason, Huskenson St.; meets first Wednesday in month.

Name,—International Moulders' Union, No. 212. Organized May 20, 1881; total membership, 130; average earnings per week, $18; average earnings per hour, 30c.; number of working hours first five days, 47½; number on Saturday, 8½; wages paid weekly and fortnightly; general cause of idleness, stock taking; total number (union and non-union) employed at trade in locality, 185; cash benefits, sickness, $5.40 per week; death, $100 to $200; out of work benefits, 40c. per week. President, John Franks; Corresponding Secretary, F. W. Felker, 114 Northumberland St.; meets first and third Fridays in month.

Name,—Piano and Organ Workers' Union, No. 34. Organized May, 1902; total membership, 76; average earnings per week, $12; average earnings per hour, 22c.; number of working hours first five days, 50; number on Saturday, 5; wages paid fortnightly; cash benefits, sickness, $5 per week; death, $50 to $300; body incorporated and registered. President, J. Camidge, 23 Earle St.; Corresponding Secretary, J. Brabson, 167 Cardigan St.; meets third Thursday in month.

Name,—International Typographical Union, No. 391. Organized June 25, 1900; total membership, 31; average earnings per week, $14 and $15; number of working hours first five days, 42; number on Saturday, 6; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 31; all are members of organization; cash benefits, death, $75 to $400; superannuation, $5 per week; evening classes for benefit of members. President, Wm. Sim, 29 George St.; Corresponding Secretary, C. H. Ritchie, 365 Elora Road; meets second Monday in month.

Hamilton.

Name,—Journeymen Barbers' International Union, No. 131. Organized 1900; total membership, 120; average earnings per week, $15; number of working hours first five days, 50; number on Saturday, 13; wages paid weekly; no idle days; cash benefits, sickness, $5 per week; death, $75 to $500. President, H. Paro, 103 James St.; Corresponding Secretary, H. J. Halford, 59 John St. S.; meets first and third Mondays in month.

Name,—Bartenders' International League, No. 197. Organized November, 1899; total membership, 135; average earnings per week, $15; number of working hours first five days, 49; number on Saturday, 11; wages paid weekly; no idle days; total number (union and non-union) employed at calling in locality, about 150; difference between members and non-members, from $2 to $3 per week; cash benefits, sickness, $5 per week. President, G. Hibberd, 123 James St. S.; Corresponding Secretary, R. Lanaway, 293 Hughson St. N.; meets first and third Sundays in month.

Name,—International Brotherhood of Bookbinders, No. 114. Organized 1902; total membership, male, 14; female, 15; average earnings per week, male, $16.50; female, $5; average earnings per hour, male, 34 1-3c.; female, 10½c.; number of working hours first five days, 44; number on Saturday, 4; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, male, 28; female, 40; death benefit, $75. President, H. Howard, 21 Young St.; Corresponding Secretary, H. P. Icely, 293 Jackson St. W.; meets second Thursday in month.

Name,—Boot and Shoe Workers' Union, No. 228. Organized Nov. 3, 1900; total membership, 95; average earnings per week; piece work; average earnings per hour, piece work; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 7; general cause of idleness; stock taking; total number (union and non-union) employed at trade in locality; male, 160; female, 80; all are members of organization; cash benefits, sickness, $8 per week; death, $130. President, J. Bimblett, 110 East Ave.; Corresponding Secretary, H. Harrison, 43 Melbourne St.; meets third Tuesday in month.

Name,—Boot and Shoe Workers International Union (Cutters), No. 232. Organized November, 1898; total membership, 30; average earnings per week, $14.85; average earnings per hour, 27c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 8; general cause of idleness, stock taking; cash benefits, sickness, $8 per week, death, $50 to $100. President, P. J. Kennedy, 298 John St. N.; Corresponding Secretary, T. J. Connell, 31 Steven St.; meets fourth Friday in month.

Name,—Boot and Shoe Workers Union, No. 444 (Sole Leather). Organized 1904; total membership, 26; average earnings per week, $12; average earnings per hour, 22c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 35; difference in wages between members and non-members, 3c. to 10c. per hour; cash benefits, sickness, $5 per week; death, $50; body incorporated and registered. President, H. Spriggs, 89 Peter St.; Corresponding Secretary, W. H. Hamilton, 15 Hess St. South; meets second Friday in month.

Name,—Broom and Whisk Makers' International Union, No. 9. Organized

1893; total membership, 20; average earnings per week, $16; average earnings per hour, 30c.; number of working hours first five days, 45; number on Saturday, 4½; no idle days; total number (union and non-union) employed at trade in locality, 20; no difference in wages and hours between members and non-members; body registered. President, W. R. Rollo, 13 Spring St.; Corresponding Secretary, W. H. McAdam, 90 Catharine St.; meets second Monday in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 815. Organized 1860; total membership, 150; average earnings per week, $17.60; average earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 60; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 700; difference in wages between members and non-members, 25c. to 40c.; cash benefits, sickness, $3 per week; superannuation, $2 per week; out of work benefits, $2.50 per week; body registered. President, John Brigg, 463 Charlton Ave. W.; Corresponding Secretary, A. Burton, 46 Garfield Ave. S.; meets alternate Fridays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 18. Organized 1888; average earnings per week, $17.60; average earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly and fortnightly; average number of days idle per member during year, 50; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 1,000; no difference between members and non-members; cash benefits, death, $100 and $200; death of wife, $25 and $50; total disability, $100 to $400. President, W. N. Smith, 92 Oxford St.; Corresponding Secretary, Albert Blythe, 49 Wellington St. N.; meets first and third Tuesdays in month.

Name,—Cigarmakers' International Union, No. 55. Organized 1864; total membership, male, 315; female, 10; average earnings per week, male, $13; female, $13; number of working hours first five days, 40; number on Saturdays, 6; wages paid weekly; average number of days idle per member during year, 10; general cause of idleness, stock taking; total number (union and non-union) employed at trade in locality, male, 315; female, 10; all are members of organization; cash benefits, sickness, $5 per week; death, $50 to $550; out of work benefits, $3 per week; body registered. President, J. A. Sullivan, Locke St. N.; Corresponding Secretary, F. Hough, 170 Duke St.; meets second Tuesday in month.

Name,—American Brotherhood of Cement Workers, No. 170. Total membership, 10; average earnings per week, $20; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 5; wages paid fortnightly; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 25; difference in wages and hours between members and non-members, non-members work 45 hours per week and receive 35c. per hour; death benefit, $50; body registered. President, J. McNab, 29 Napier St.; Corresponding Secretary, W. Irving, 22 Victoria Ave. S.; meets every second Monday in month.

Name,—Order of Railway Conductors, No. 27. Organized April, 1881; total membership, 44; average earnings per week, $25; average earnings per hour, 30c.; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 50; no difference in wages and hours between members and non-members; cash benefits, death, insurance; superannuation, relief fund. President, H. Mandar, 142 Strachan St. E.; Corresponding Secretary, A. Cameron, 297 York St.; meets first and third Sundays in month.

Name,—International Brotherhood of Electrical Workers (Linemen), No. 390. Organized May 27, 1912; total membership, 10; average earnings per week, $20; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 5; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 40; all are members of organization; death benefit, $100; body incorporated and registered. President, A. Tounge, 40 Liberty St.; Corresponding Secretary, A. E. Hurd, 131 Forest Ave.; meets first and third Fridays in month.

Name,—Brotherhood of Locomotive Engineers, No. 133. Total membership, 105; average earnings per month, $125; average earnings per hour, 40c. to 50c.; average number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; death benefits, amount of insurance; indigent fund, $30 per month; body incorporated and registered. President, J. Oliver, 198 Lock St. N.; Corresponding Secretary, A. O. Griffitt, 193 Napier St.; meets second and fourth Sundays in month.

Name,—Canadian Association of Stationary Engineers, No. 2. Organized May, 1887; total membership, 51; average earnings per week, $14; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 10; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 80; blackboard exercises every meeting; body incorporated and registered. President, C. A. Leckie, 74 William St.; Corresponding Secretary, A. W. Heath, 111 Burris St.; meets second and fourth Mondays in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 151. Organized March 12, 1888; total membership, 100; average earnings per week, $15; average earnings per hour, 23c.; wages paid monthly; general cause of idleness, depression in freight; total number (union and non-union) employed at calling in locality, 140; no difference in wages and hours between members and non-members; cash benefits, sickness, 50c. per day; death, $500 to $3,000; superannuation, G.T.R. pension; body incorporated and registered. President, G. Thedorff, 91 Robert St.; Corresponding Secretary, T. McQueen, 56 West Strachan St.; meets first and third Sundays in month.

Name,—United Garment Workers of America, No. 196. (Pressers). Organized Oct. 7, 1912; total membership, 150; average earnings per week, $15; average earnings per hour, 30c.; number of working hours first five days, 45; number on Saturday, 4; wages paid weekly; total number (union and non-union) employed at trade in locality, 150; all organized; social evenings provided for members. President, John Madigan, 205 Mary St.; Corresponding Secretary, John Thake, 326 McNab St. North; meets second and fourth Mondays in month.

Name,—United Garment Workers of America, No. 256. Organized 1900; total membership, male, 160; female, 90; average earnings per week, male, $18; female, $8; number of working hours first five days, 45; number on Saturday, 4; wages paid weekly; average number of days idle per member during year, 26; general cause of idleness, slack season; total number (union and non-union) employed at trade in locality, male, 1,200; female, 2,000; no difference in wages and hours between members and non-members. President, M. Levine, 25 Binley St.; Corresponding Secretary, S. L. Landers, 39 Charles St.; meets second Wednesday in month.

Name,—International Glass Workers' Association, No. 33. Organized March

10, 1913; total membership, 17; average earnings per week, $15; average earnings per hour, 30c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 17; all are members of organization; death benefit, $100; body incorporated. President, J. Robinson, 244½ Wellington St.; Corresponding Secretary, J. Nugent, 203 Rebecca St.; meets first and fourth Mondays in month.

Name,—International Association of Granite Cutters of America. Organized 1877; total membership, 12; average earnings per week, $16.50; average earnings per hour, 37½c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 18; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 10; difference in wages between members and non-members, union men, 37½c. per hour; non-union, from 20c. to 30c. per hour; cash benefits, death, $75 to $200; superannuation, $12 per month; out of work benefits, half dues on obtaining 60 years with 20 years constantly a member of the union; body incorporated. Corresponding Secretary, Wm. Fletcher, 105 Canada St.; meets fourth Thursdays in month.

Name,—International Journeymen Horseshoers, No. 72. Total membership, 16; average earnings per week, $17; average earnings per hour, 30c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 30; difference in wages between members and non-members, 5c. per hour; body incorporated and registered. President, W. Allen, Caroline St. S.; Corresponding Secretary, J. P. Russell, 141 Main St. W.; meets second and fourth Wednesdays in month.

Name,—Federal Labour Union, No. 11 (City Firemen). Organized January, 1900; total membership, 68; wages paid fortnightly; cash benefits, death, $50. President, J. Crawford, 39 Sophia St. S.; Corresponding Secretary, J. Hotrum, 251 Wellington St. N.; meets first Monday in month.

Name,—International Longshoremen's Association, No. 792. Organized October, 1911; total membership, 77; average earnings per week, $17; wages paid by job; total number (union and non-union) employed at calling in locality, 150 to 200; no difference in wages and hours between members and non-members; body incorporated and registered. President, A. Hill, 15 Murray St. W.; Corresponding Secretary, G. Jobborn, 545 Hughson St. N.; meets second and fourth Thursdays in month.

Name,—International Moulders' Union, No. 26. Organized 1860; total membership, 405; average earnings per week, $16.60; average earnings per hour, 30c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly and fortnightly; general cause of idleness, slackness of trade; cash benefits, sickness, $5.40 per week; death, $100 to $200. President, Thos. Church, 115 Peter St.; Corresponding Secretary, J. W. Ripley, 159 Mary St.; meets every Wednesday in year.

Name,—American Federation of Musicians, No. 293. Organized April 9, 1903; total membership, male, 180; female, 10. President, H. Casel, 43 Barton St. W.; Corresponding Secretary, J. Gimblett, 110 East Ave. N.; meets second Sunday in Month.

Name,—Brotherhood of Painters, Decorators and Paperhangers of America, No. 205. Organized June 6, 1900; total membership, 103; average earnings per

week, $15.40 to $17.50; average earnings per hour, 35c.; number of working hours first five days, 40 in winter, 45 in summer; number on Saturday, 4 in winter; 5 in summer; wages paid weekly; average number of days idle per member during the year, 60; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 403; difference in wages or hours between members and non-members, union men receive 35c.; non-union from 25c. up; hours the same; cash benefits, sickness, from $25 to $75; death, $100 to $300; body incorporated and registered. President, Chas. Richardson, 39 Evans Ave.; Corresponding Secretary, Geo. Purcell, 76 Main St. West; meets first and third Mondays in month.

Name,—Pattern Makers' League of North America. Total membership, 45; average earnings per week, $18; average earnings per hour, 32½c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly and fortnightly; total number (union and non-union) employed at trade in locality, 45; cash benefits, $4 per week; superannuation, $12 to $16 per week; body incorporated and registered. President, S. P. McFadden, 183 Victoria Ave. N.; Corresponding Secretary, J. Harrower, 40 St. Matthew's Ave.; meets first and third Thursdays in month.

Name,—International Union of Metal Buffers and Polishers, No. 26. Total membership, 52; average earnings per week, $16.50; average earnings per hour. 30c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly and fortnightly; general cause of idleness, sickness; total number (union and non-union) employed in trade in locality, 135; no difference between members and non-members; cash benefits, sickness, $3.50 per week; death, $100; body incorporated and registered. President, C. Mannell, 21 Wood St. West; Corresponding Secretary, D. Irvine, 56 Edinburgh Avenue; meets first and third Wednesdays in month.

Name,—International Union Printing Pressmen and Assistants, No. 176. Organized Nov. 4, 1904; total membership, 65; average earnings per week, $16; average earnings per hour, 33 1-3c.; number of working hours first five days, 43½; number on Saturday, 4½; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, about 70; cash benefits, death, $100; technical school with correspondence course at Rogersville, Tenn., open to members only. President, F. Holleran, 138 Cannon St. E.; Corresponding Secretary, W. R. Berry, 193 Market St.; meets fourth Wednesday in month.

Name,—Amalgamated Association of Sheet Metal Workers, No. 61. Organized July 20, 1899; total membership, 50; average earnings per week, $17.50; average earnings per hour, 35c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; total number (union and non-union) employed at trade in locality, 100; difference in wages and hours between members and non-members, 10c. to 15c.; death benefits, $100; body incorporated and registered. President, G. E. Farr, Burlington Beach; Corresponding Secretary, R. Sibbald, 28 Park St. S.; meets alternate Fridays in month.

Name,—Stove Mounters' International Union, No. 35. Total membership, 12; average earnings per week, $12; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 9; wages paid fortnightly; general cause of idleness, short of stock; total number (union and non-union) employed at trade in locality, 21; no difference in wages and hours between members and non-members. President, W. Keegan, 67 Cheaver St.; Corresponding Secretary, T. Bevers, 25 Tisdale St.; meets first Monday in month.

Name,—Amalgamated Association of Street and Electric Railway Employees, No. 107. Organized 1896; total membership, 175; average earnings per week, $11; average earnings per hour, 21c.; number of working hours first five days, 50; number on Saturday, 6½; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 225; no difference between members and non-members; cash benefits, sickness, $4 per week; death, $100 to $800; body incorporated and registered. President, J. W. McIlwraith, King St. W.; Corresponding Secretary, E. W. Batt, 63 Aikman Ave.; meets second and fourth Saturdays in month.

Name,—Stereotypers' and Electrotypers' Union (International), No. 113. Organized Feb. 24, 1913; total membership, 9; average earnings per week, $19; average earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 5 or 6; wages paid weekly; total number (union and non-union) employed at trade in locality, 9; all are members of organization; death benefits, $100. President, G. W. Wills, 240 Hunter St. E.; Corresponding Secretary, F. B. Haas, 253 York St.; meets first Monday in month.

Name,—Journeymen Tailors' Union of America, No. 149. Organized 1883; total membership, male, 42; female, 15; average earnings per week, male, $15; female, $9; number of working hours first five days, 50; number on Saturday, 10; wages paid weekly; general cause of idleness, dull season; total number (union and non-union) employed at trade in locality, male, 75; female, 50; no difference between members and non-members; body registered. President, C. Smith, 300 Bold St.; Corresponding Secretary, J. Mosgrove, 103 Argue St.; meets third Monday in month.

Name,—Order of Railway Telegraphers, No. 155. Organized Jan. 1, 1912; total membership, 36; average earnings per week, $20; average earnings per hour, 23c.; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 38; no difference between members and non-members; body registered. President, W. R. Kelly, 91 Mulberry St.; Corresponding Secretary, E. D. Armstrong, Box 98, Smithville; meets second Sunday in month.

Name,—International Alliance Theatrical Stage Employees, No. 129. Organized July, 1906; total membership, 31; average earnings per week, $15; average earnings per hour, 35c.; number of working hours first five days, 34; number on Saturday, 6; wages paid weekly; general cause of idleness, closing of theatres; total number (union and non-union) employed at calling in locality, 31; no difference between members and non-members. President, W. Reid, 109 Cannon St. E.; Corresponding Secretary, G. Fitzpatrick, 52 Spring St.; meets fourth Sunday in month.

Name,—Tobacco Workers' International Union, No. 48. Organized Sept. 7, 1899; total membership, male, 75; female, 85; average earnings per week, male, piece work; female, piece work; average earnings per hour, male, piece work; female, piece work; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 90; general cause of idleness, over-stocked and stock taking; total number (union and non-union) employed at trade in locality, male, 90; female, 120; no difference in wages and hours between members and non-members; cash benefits; sickness, $3 per week; death, $50; superannuation, $8 per week; out of work benefits, $3 per week; body incorporated and registered. President, A. J.

Turner, 130 Forest Ave.; Corresponding Secretary, A. H. Broughton, 22 Hunt St.; meets second and fourth Mondays in month.

Name,—Brotherhood of Railway Trainmen, No. 226. Organized July 4, 1886; total membership, 155; average earnings per week, $15 to $25; average earnings per hour, 23c. to 38c.; number of working hours first five days, mileage basis; number on Saturday, mileage basis; wages paid monthly; general cause of idleness, light traffic; total number (union and non-union) employed at calling in locality, 200; no difference between members and non-members; cash benefits, death, $500, $1,000, $1,500; in case of disability the full amount of policy is paid; strike pay, $35 per month; body incorporated and registered. President, W. T. Irvine, 118 Tisdale St.; Corresponding Secretary, Arthur Smith, 25½ Melbourne St.; meets second and last Sunday in month.

Havelock.

Name,—Order of Railway Conductors, No. 578. Organized Sept. 16, 1910; total membership, 20; average earnings per week, $30 to $35; average earnings per hour, 36c.; number of working hours first five days, mileage basis; number on Saturday, mileage basis; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 32; no difference in wages and hours between members and non-members; death benefits, $1,000, $2,000, $3,000; body incorporated. President, W. H. Jones; Corresponding Secretary, J. A. Garratt, Box 47, Havelock; meets first and third Mondays in month.

Name,—Brotherhood of Locomotive Engineers, No. 658. Organized 1904; total membership, 40; average earnings per week, $30; number of working hours first five days, irregular; number on Saturday, irregular; wages paid monthly; average number of days idle per member during year, irregular; general cause of idleness, slack business; total number employed at calling in locality, 40; all are members of organization; no difference in wages and hours between members and non-members; cash benefits, death, insurance; body incorporated and registered. President, R. Jack; Corresponding Secretary, J. Toman, Havelock Post Office; meets second and fourth Mondays in month.

Name,—Brotherhood of Railway Trainmen, No. 293. Organized Aug. 9, 1902; total membership, 68; average earnings per week, conductors, $35; trainmen, $22; average earnings per hour, conductors, 36c.; trainmen, 26c.; number of working hours first five days, mileage basis; number on Saturday, mileage basis; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 86; no difference in wages and hours between members and non-members; cash benefits, death, amount of insurance; body incorporated and registered. President, J. E. Kilsey, Havelock; Corresponding Secretary, W. J. Green, Havelock; meets second and fourth Thursdays in month.

Humberstone.

Name,—United Brotherhood of Carpenters and Joiners, No. 1,168. Total membership, 50; average earnings per week, $21; average earnings per hour, 40c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly; average number of days idle per member during year, 75; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 60; difference between members and non-members, non-union

work 10 hours per day and receive 25c. per hour; death benefits, $100 to $400; body registered. President, L. White, Box 25, Humberstone; Corresponding Secretary, Ira Barnhardt, Box 78, Humberstone; meets first and third Mondays in month.

Ignace.

Name,—Brotherhood of Railway Carmen, No. 95. Organized 1912; total membership, 12; average earnings per week, $13.25; average earnings per hour, 26½c.; number of working hours first five days, 45; number on Saturday, 5; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 12. President, J. Schofield; Corresponding Secretary, E. Baker, Ignace; meets 20th in month.

Ingersoll.

Name,—International Brotherhood of Maintenance of Way Employees, No. 503. Organized, 1907; total membership, 30; average earnings per week, foremen, $14.40; labourers, $10.20; average earnings per hour, foremen, 24c.; labourers, 17c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 75; no difference in wages and hours between members and non-members; cash benefits, death, insurance; superannuation, $20 per month; body incorporated and registered. President, M. Sprague, Ingersoll; Corresponding Secretary, D. McCord, Belmont; meets at call of President.

Jack Fish.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 231. Organized 1892; total membership, 98; average earnings per week, $11.40; average earnings per hour, 19c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; total number (union and non-union) employed at calling in locality, 300; difference in wages or hours between members and non-members, members receive 19c. per hour; non-members 17c. per hour; body incorporated and registered. President, J. Leewell, Heron Bay; Corresponding Secretary, A. Bianconi, Jack Fish; meets last Satuday in month.

Kenora.

Name,—Brotherhood of Locomotive Engineers, No. 535. Total membership, 72; average earnings per week, $45; average earnings per hour, 50c.; number of working hours per week, subject to call at all times; wages paid monthly; total number (union and non-union) employed at trade in locality, 82; no difference in wages and hours between members and non-members; railway Y.M.C.A. privileges; body incorporated and registered. President, J. D. Preston, Kenora; Corresponding Secretary, J. Penney, Kenora; meets first Wednesday and third Sunday in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 305. Organized Oct. 19, 1887; total membership, 98; average earnings per week, $25: number of working hours first five days, 40 to 60; number on Saturday, 8 to

12; wages paid monthly; general cause of idleness, slack traffic; total number (union and non-union) employed at calling in locality, 115; no difference between members and non-members; death benefit, $500 to $3,000. President, A. T. Alterton, Y.M.C.A.; Corresponding Secretary, Fred Lowe, Box 309; meets first Sunday and third Wednesday in month.

Name,—International Association of Machinists, No. 28. Organized Jan., 1907; total membership, 17; average earnings per week, $24; average earnings per hour, 45½c.; number of working hours first five days, 45; number on Saturday, 9; wages paid monthly; total number (union and non-union) employed at trade in locality, 17; body incorporated and registered. President, T. McLellan, Box 151, Kenora; Corresponding Secretary, J. W. Douglas, Box 151, Kenora; meets third Monday in month.

Name,—Machinists' Helpers (A.F.L.) No. 12,806. Organized 1913; total membership, 6; average earnings per week, $14; average earnings per hour, 27c.; number of working hours first five days, 45; number on Saturday, 9; wages paid monthly; no idle days; total number (union and non-union) employed at trade in locality, 10; no difference between members and non-members; out of work benefits, $4 for one week. Corresponding Secretary, Thomas Turner, Box 199, Kenora.

Name,—Order of Railway Telegraphers, No. 7. Organized 1895; total membership, male, 690; female, 4; average earnings per week, male, $20; female, $20; average earnings per hour, male, 30c.; female, 30c.; number of working hours first five days, 55; number on Saturday, 11; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, male, 712; female, 4; no difference between members and non-members; death benefit, amount of insurance. President, D. Campbell, Hampton Apartments, Winchester St., Toronto; Corresponding Secretary, R. C. Wilton, Kenora; meets monthly.

Name,—Brotherhood of Railway Trainmen, No. 270. Organized 1887; total membership, 123; average earnings per week, mileage basis; average earnings per hour, mileage basis; wages paid monthly; total number (union and non-union) employed at calling in locality, 132; no difference between members and non-members; death benefits, amount of insurance. President, A. McDonald, 120 4th St. N.; Corresponding Secretary, J. J. Closkey, Box 109, Kenora; meets second and fourth Wednesdays in month.

Kingston.

Name,—Journeymen Barbers' International Union, No. 514. Organized April 17, 1903; total membership, 21; average earnings per week, $14; average earnings per hour, 22c.; number of working hours first five days, 50; number on Saturday, 13; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 30; no difference in wages and hours between members and non-members; cash benefits, sickness, $5 per week; death, $75 to $500. President, P. Lawless, 1 Rideau St.; Corresponding Secretary, W. J. Lemmon, 219 University Ave.; meets last Monday in month.

Name,—Bricklayers', Masons' and Plasterers' International Union, No. 10. Organized April, 1899; total membership, 73; average earnings per week, $24.40; average earnings per hour, 55c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; average number of days idle per member during year, 100; general cause of idleness, weather conditions;

total number (union and non-union) employed at trade in locality, 80; difference in wages and hours between members and non-members, non-members receive from 30c. to 45c. per hour; cash benefits, death, $300; reading room for use of members. President, J. Turner, 304 Brock St.; Corresponding Secretary, A. Fowler, 323 Johnston St.; meets second and fourth Tuesdays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 249. Organized Aug. 1, 1898; total membership, 72; average earnings per week, $18; average earnings per hour, 37½c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; average number of days idle per member during year, 30; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 100; difference in wages and hours between members and non-members, non-members work 10 hours for a wage ranging from 25c. to 35c. per hour; cash benefits, sickness, $3 per week; death, $200; death of wife, $50; disability, $200 to $400; reading and smoking rooms for members. President, J. Watts, 99 Stuart St.; Corresponding Secretary, W. H. Hubble, 26 Quebec St.; meets second and fourth Mondays in month.

Name,—National Association of Marine Engineers, No. 4. Organized 1901; total membership, 102; average earnings per week, $15 to $25; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly and fortnightly; general cause of idleness, closing of navigation; total number (union and non-union) employed at calling in locality, 102; no difference in wages and hours between members and non-members; lectures on different subjects for members. President, A. E. Kennedy, 395 Johnston St.; Corresponding Secretary, J. Gillie, 101 Clergy St.; meets every Monday in month.

Name,—International Building Labourers' Union, No. 66. Organized April 13, 1903; total membership, 40; average earnings per week, $13.44; average earnings per hour, 28c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; average number of days idle per member during year, 140; general cause of idleness, weather conditions; total number (union and non-union) employed at calling in locality, 150; difference in wages between members and non-members, organized 28c. per hour; unorganized, 25c. per hour; death benefit, $100; reading room provided for use of members. President, G. Wilkinson, Alfred St.; Corresponding Secretary, W. Baxter, 154 Rideau St.; meets first and third Wednesdays in month.

Name,—Federated Association of Letter Carriers, No. 8. Organized Jan. 1, 1908; total membership, 14; average earnings per week, $15; average earnings per hour, 28c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 14; no difference in wages and hours between members and non-members; body incorporated and registered. President, R. J. Elliott, Kingston Post Office; Corresponding Secretary, B. J. Hanlon, 88 Division St.; meets at call of President.

Name,—International Moulders' Union, No. 252. Organized 1886; total membership, 40; average earnings per week, $17.88; average earnings per hour, 36c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly and fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 40; all are members of organization; cash benefits, sickness, $5.40 per week; death, $100 to $200; body incorporated and registered. President, R. Murray, 32 Patrick St.; Corresponding Secretary, Joseph Clark, Princess St.; meets first and third Mondays in month.

Name,—International Brotherhood of Painters, Decorators and Paper Hangers, No. 114. Organized March 15, 1887; total membership, 30; average earnings per week, $15; average earnings per hour, 27 7-9c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly and fortnightly; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 40; cash benefits, death, $100 to $300; body incorporated. President, W. Veale, Victoria St.; Corresponding Secretary, W. T. Edgar, 374 Alfred St.; meets first and third Tuesdays in month.

Name,—United Association of Plumbers, Steamfitters and Gasfitters, No. 221. Organized Aug. 18, 1900; total membership, 31; average earnings per week, $16.50; average earnings per hour, 34½c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 31; all are members of organization; cash benefits, sickness, $5 per week; death, $100; superannuation, $300 to $500; body incorporated. President, J. Burke, 35 Main St.; Corresponding Secretary, T. Blomelly, 67 Collingwood St.; meets first and third Tuesdays in month.

Name,—Journeymen Stonecutters' Association of North America. Organized 1889; total membership, 22; average earnings per week, $24; average earnings per hour, 50c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; average number of days idle per member during year, 75; general cause of idleness, lack of work; total number (union and non-union) employed at trade in locality, 22; all are members of organization; cash benefits, death, $150; body registered. President, F. A. Monk, 21 Elm St.; Corresponding Secretary, W. H. Jackson, 110 Patrick St.; meets second Tuesday in month.

Name,—Journeymen Tailors' Union of North America, No. 263. Organized 1897; total membership, male, 14; female, 13; average earnings per week, male, $13.50; female, $3.50; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly; average number of days idle per member during year, 60; general cause of idleness, lack of work; total number (union and non-union) employed at trade in locality, male, 29; female, 42; no difference between members and non-members; cash benefits, sickness, $5 per week; death, $100; body incorporated and registered. President, R. Alexander, 451 Albert St.; Corresponding Secretary, J. Sauve, 29 Brock St.; meets first and third Mondays in month.

Kingsville.

Name,—International Union of Tobacco Workers, No. 71. Total membership, male, 4; female, 10; average earnings per week, male, $8.50; female, $5; number of working hours first five days, 50; number on Saturday, 8; wages paid weekly; total number (union and non-union) employed at trade in locality, male, 4; female, 10; all are members of organization; cash benefits, sickness, $3 per week; death, $50. President, Mrs. Blum, Kingsville; Corresponding Secretary, Mrs. E. Sellick, Box 98, Kingsville.

Lindsay.

Name,—Order of Railway Conductors, No. 322. Organized Nov. 3, 1902; total membership, 26; average earnings per week, $25; average earnings per hour, 40c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) em-

ployed at calling in locality, 44; no difference in wages and hours between members and non-members; cash benefits, sickness, $3 per week; death, amount of insurance; superannuation, $50 per month; body incorporated and registered. President, A. B. Garretson, Cedar Rapids, Iowa; Corresponding Secretary, W. J. Hodgson, Box 581, Lindsay; meets first and second Mondays in month.

Name,—Brotherhood of Locomotive Engineers, No. 174. Organized, 1882; total membership, 70; average earnings per week, $30; no idle days; all are members of organization; no difference in wages and hours between members and non-members; cash benefits, death, amount of insurance; body incorporated and registered. President, W. J. Chambers, Box 205; Corresponding Secretary, T. Wilkinson, Box 205 Lindsay; meets second and fourth Sundays in month.

Name,—Brotherhood of Railway Trainmen, No. 308. Organized May 10, 1889; total membership, 96; average earnings per week, $16; average earnings per hour, 26c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; average number of days idle per member during year, 50; general cause of idleness, depression in business; total number (union and non-union) employed at calling in locality, 135; no difference in wages and hours between members and non-members; body incorporated. President, H. Debois, Box 528, Lindsay; Corresponding Secretary, D. Walker, Box 528 Lindsay; meets first and second Sundays in month.

LONDON.

Name,—Journeymen Barbers' International Union, No. 366. Total membership, 40; average earnings per week, $12; number of working hours first five days, 43; number on Saturday, 12; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, about 55; difference in wages and hours between members and non-members, 5 hours weekly; $2 weekly; cash benefits, sickness, $5 per week; death, $75 to $500. President, J. Frezell, 617 Dundas St.; Corresponding Secretary, J. E. Secker, 713 Richmond St.; meets fourth Monday in month.

Name,—Bartenders' International League, No. 137. Organized, 1904; total membership, 63; average earnings per week, $15; number of working hours first five days, 30 to 50; number on Saturday, 6 to 8; wages paid weekly; total number (union and non-union) employed at calling in locality, 63; difference in wages and hours between members and non-members, non-members work at any wage; cash benefits, sickness, $5 per week; death, $50; body incorporated and registered. President, F. Hoysom, "Dominion House"; Corresponding Secretary, H. G. Edsall, 58 Colborne St.; meets second and fourth Sundays in month.

Name,—International Alliance of Billposters and Billers, No. 22. Organized Oct. 1, 1907; total membership, 10; average earnings per week, $12; average earnings per hour, 25c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 10; difference in wages and hours between members and non-members, no difference in wages, but 4 receive $14 per week, 4 receive $12 per week, and 2 receive $10 per week; body incorporated and registered. President, Wm. Cooney, Queen's Ave.; Corresponding Secretary, C. L. Vincent, 673 Lorne Ave.; meets second and fourth Sundays in month.

Name,—International Brotherhood of Bookbinders, No. 206. Organized Dec. 3, 1912; total membership, 10; average earnings per week, $14; number of working hours first five days, 47½; number on Saturday, 4½; wages paid weekly;

total number (union and non-union) employed at trade in locality, 14; death benefit, $75; body incorporated and registered. President, John Moffatt, 318 Talbot St.; Corresponding Secretary, C. A. Barnes, 25 Carlton Ave.; meets second Friday in month.

Name,—Boot and Shoe Workers' Union, No. 88. Organized April, 1907; total membership, male, 40; female, 20; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly; total number (union and non-union) employed at trade in locality, male, 40; female, 20; all are members of organization; cash benefits, sickness, $5 per week; death, $100; body incorporated and registered. Corresponding Secretary, W. G. Gregory, 347 Wortley Road; meets second and fourth Thursdays in month.

Name,—Bricklayers' and Masons' International Union, No. 5. Organized Oct. 1, 1882; total membership, 76: average earnings per week, $19.50; average earnings per hour, 50c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly; average number of days idle per member during year, 130; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 80; difference in wages and hours between members and non-members, about 5c. per hour; cash benefits, death, $50 to $300. President, E. Holiday, Clarence St.; Corresponding Secretary, C. P. Short, 571 York St.; meets second and fourth Wednesdays in month.

Name,—United Brewery Workers' International Union, No. 381. Organized 1910; total membership, 130; average earnings per week, $10.50; number of working hours first five days, 47½ for 6 months; 45 for 6 months; number on Saturday, 6; wages paid weekly; no idle days; total number (union and non-union) employed at calling in locality, 130; all organized; out of work benefits, dues remitted; body incorporated and registered. President, J. Blanch, Piccadilly St.; Corresponding Secretary, A. Jackson, 134 Mill St.; meets third Thursday in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 881. Organized June, 1860; total membership, 19; average earnings per week, $15; average earnings per hour, 32c.; number of working hours first five days, 45; number on Saturday, 4½; wages paid weekly; average number of days idle per member during year, 30; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 250; no difference between members and non-members; cash benefits, sickness, $3 per week; death, $60; superannuation, $2 per week; out of work benefits, $2.50 per week. President, Walter Ellis, 20 Alexander St.; Corresponding Secretary, John Tanton, 379 Waterloo St.; meets second and fourth Wednesday in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 1,946. Organized November, 1907; total membership, 30; average earnings per hour, 35c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly and monthly; general cause of idleness, excess of immigration; total number (union and non-union) employed at trade in locality, 400; difference in wages between members and non-members, 10s. to 15c. per hour; death benefit, $200; body incorporated. President, P. H. Philippin, 92 Chesley Ave.; Corresponding Secretary, J. Hill, 768 Dundas St.; meets second and fourth Fridays in month.

Name,—Cigarmakers' International Union, No. 278. Organized, 1891; total membership, male, 455; female, 165; average earnings per week, male, $14; female, $11; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly; average number of days idle per member during year, 12;

general cause of idleness, holidays and stock taking; total number (union and non-union) employed at trade in locality, male, 540; female, 365; difference in wages between members and non-members, from $1 to $5 per M.; some are paid the union scale; cash benefits, sickness, $5 per week; death, $50, $200; $350, $550; out of work benefits, $3 per week; body incorporated and registered. President, Arthur Borland, c.o. 110 Dundas St.; Corresponding Secretary, John McKenzie, 110 Dundas St.; meets first and third Tuesdays in month.

Name,—Order of Railway Conductors, No. 16. Organized Feb. 27, 1881; total membership, 62; average earnings per week, $30; average earnings per hour, 40c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; cash benefits, death, $1,000 to $5,000; disability, $45 per month; special work for members, instruction in operation rules, air brake, air whistle and steam heating. President, Thomas Parker, 27 Beaconsfield Ave.; Corresponding Secretary, H. J. Heath, 250 Queen's Ave.; meets first and third Sundays in month.

Name,—International Brotherhood of Electrical Workers, No. 120. Organized 1905; total membership, 35; average earnings per week, $12 to $15; average earnings per hour, 25c. to 34c.; number of working hours first five days, 45 to 50; number on Saturday, 4 to 10; wages paid weekly; average number of days idle per member during year, 60; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 200; difference in wages between members and non-members, about 5c. per hour on line work; death benefit, $100; body registered. President. E. Ingles, 85 Clarence St.; Corresponding Secretary, Wm. J. Tierney, 365 Cheapside St.; meets second and fourth Thursdays in month.

Name,—Brotherhood of Locomotive Engineers, No. 68. Organized 1864; total membership, 50; average earnings per week, $25; wages paid monthly; general cause of idleness, lack of power; total number (union and non-union) employed at calling in locality, 75; no difference in wages and hours between members and non-members; cash benefits, death, $1,500 to $4,500; body incorporated and registered. President, J. Porteous, 374 York St.; Corresponding Secretary, J. Irwin, 745 Dundas St.; meets first Sunday and third Thursday in month.

Name,—Amalgamated Society of Engineers, No. 709. Organized 1851; total membership, 15; average earnings per week, $15.70; average earnings per hour, 26c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly, fortnightly and monthly; no idle days; total number (union and non-union) employed at trade in locality, 250; difference in wages and hours between members and non-members, about 20c. per day; cash benefits, sickness, $2.50 per week; death, $60; superannuation, from $1.75 to $2.50 per week; accident benefit, $500; out of work benefits, $2.50 per week; body registered. President, A. McDonald, 304 Oxford St.; Corresponding Secretary, G. H. Scollick, 583 Grey St.; meets alternate Fridays from April 11, 1913.

Name,—Canadian Association of Stationary Engineers, No. 30. Organized 1887; total membership, 70; average earnings per week, $16; average earnings per hour, 25c. to 30c.; number of working hours first five days, 50; number on Saturday, 10; wages paid weekly, fortnightly and monthly; no idle days; total number (union and non-union) employed at trade in locality, 130; no difference between members and non-members; permanent club rooms, library and blackboard classes for members; body incorporated. President, J. E. Middleton, 128

York St.; Corresponding Secretary, D. F. Campbell, 114 Simcoe St.; meets every Friday in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 117. Organized 1873; total membership, 67; average earnings per week, $16; average earnings per hour, 22½c.; number of working hours first five days, 50 to 80; number on Saturday, 10 to 16; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 67; no difference between members and non-members; cash benefits, sickness, $3.50 per week; death, $150; superannuation after 65 years of age; body incorporated and registered. President, J. W. Richardson, 14 Kitchener Ave.; Corresponding Secretary, Wm. McCall, 379 Hamilton Road; meets first Wednesday and third Sunday in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 468. Organized August 29, 1891; total membership, 75; average earnings per week, $25; average earnings per hour, 30c.; number of working hours first five days, 60; number on Saturday, 12; wages paid monthly; total number (union and non-union) employed at calling in locality, 87; no difference between members and non-members; cash benefits, sickness, donation from lodge; death, $500 to $3,000; superannuation, C.P.R. pension fund; body incorporated and registered. President, D. McAuley, 939 Lorne Ave.; Corresponding Secretary, C. A. Phipps, 830 Lorne Ave.; meets second and fourth Sundays in month.

Name,—United Garment Workers' Union, No. 33. Total membership, male, 40; female, 15; average earnings per week, male, $12; female, $5.50; number of working hours first five days, 45; number on Saturday, 4; wages paid weekly; average number of days idle per member during year, 20; general cause of idleness, no stock; total number (union and non-union) employed at trade in locality, male, 150; female, 400; difference in wages between members and non-members, 20 per cent.; body incorporated. President, Henry Kurtzman, 128 Matland St.; Corresponding Secretary, H. L. Bedford, 436 Richmond St.; meets second Wednesday in month.

Name,—International Association of Granite Cutters. Organized August, 1905; total membership, 3; average earnings per week, $19.50; average earnings per hour, 37½c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 7; no difference in wages or hours between members and non-members; cash benefits, death, $250; body incorporated and registered. Corresponding Secretary, W. Cunningham, 145 Clarence St., London.

Name,—Federal Labour Union, No. 5. Organized 1903; total membership, 16; wages paid weekly; cash benefits, sickness, aid extended when needed; special work for members, open meetings and debates. President, W. Cole, 100 Cartwright St.; Corresponding Secretary, H. Pearce, Central Ave.; meets third Friday in month.

Name,—Federated Association of Letter Carriers, No. 4. Organized 1888; total membership, 45; average earnings per week, $16.50; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 45; no difference in wages or hours between members and non-members; cash benefits, death, $1,000. President, F. Currie, Dundas St. E.; Corresponding Secretary, W. M. Empey, 573 Oxford St.; meets first Wednesday in month.

Name,—International Alliance of Theatrical Stage Employees, No. 105. Organized November, 1902; total membership, 24; average earnings per week, $13.50;

average earnings per hour, 25c.; wages paid weekly; average number of days idle per member during year, 90; general cause of idleness, theatres closed; no difference between members and non-members; body incorporated and registered. President, W. J. Burrows, 225 Grey St.; Corresponding Secretary, G. McFadden, 315 Ottaway Ave.; meets first and third Sundays in month.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 195. Total membership, 206; average earnings per week, $14; average earnings per hour, 23c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; average number of days idle per member during year, 90; general cause of idleness, reduction in staff; total number (union and non-union) employed at calling in locality, 400; no difference between members and non-members; superannuation, $20 per month at age of 65. President, D. Campbell, 10 Thornton Ave.; Corresponding Secretary, D. H. Walsh, 281 Central Ave.; meets last Saturday in month.

Name,—American Federation of Musicians, No. 279. Organized Feb. 2, 1902; total membership, male, 140; female, 10. President, H. Woostie, 310 Wharncliffe Road: Corresponding Secretary, C. N. Perrin, 352 Adelaide St.; meets fourth Sunday in month.

Name,—International Union of Metal Polishers, Buffers, Platers and Brass Workers, No. 32. Organized May, 1895; total membership, 57; average earnings per week, $19.75; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 5 and 8; wages paid weekly and fortnightly; average number of days idle per member during year, 18; general cause of idleness, repairs; total number (union and non-union) employed at trade in locality, 70; cash benefits, death, $50 to $200; out of work benefits, dues remitted. President, D. Eldridge, 16 Clarke St.; Corresponding Secretary, C. H. Bailey, 85 Hamilton Road; meets second and fourth Fridays in month.

Name,—Printing Pressmen and Assistants' International Union, No. 173. Organized October, 1908; total membership, 37; average earnings per week, $9 to $20; average earnings per hour, 15c. to 25c.; number of working hours first five days, 44; number on Saturday, 4; wages paid weekly; total number (union and non-union) employed at trade in locality, 62; difference in wages and hours between members and non-members, non-members work from 52 to 60 hours; death benefit, $100; body incorporated and registered. President, C. Hollins, 270 Horton St.; Corresponding Secretary, H. Smythe, 642 Marshall St.; meets first Monday in month.

Name,—Stove Mounters' International Union, No. 33. Number of working hours first five days, 30; number on Saturday, 5; wages paid weekly; death benefit, $100. President, G. Robinson, 12 Lesley St.; Corresponding Secretary, W. Beck, 65 Adelaide Street.

Name,—Journeymen Stonecutters' Association of North America. Organized March, 1853; total membership, 10; average earnings per week, $19.80; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly; average number of days idle per member during year, 90; general cause of idleness, slackness of trade and cold weather; total number (union and non-union) employed at trade in locality, 10 or more; difference in wages and hours between members and non-members, non-members receive from 25c. to 45c. per hour; cash benefits, death, $100 to $125; body registered. President, T. Harper, 2 Sherley Ave., S.; Corresponding Secretary, H. Boyd, 875 Adelaide St.; meets second and fourth Wednesdays in month.

Name,—Journeymen Tailors' Union of America, No. 30. Organized 1883. total membership, male, 40; female, 3; average earnings per week, male, $15; female, $10; average earnings per hour, male, 25c.; wages paid weekly and fortnightly; general cause of idleness, slack season; mostly all are members of organization; cash benefits, sickness, $5 per week; death, $25 to $100; body incorporated and registered. President, Wm. Mottashed, Picadilly St.; Corresponding Secretary, J. G. Hussey, 241 Colborne St.; meets third Monday in month.

Name,—Order of Railway Telegraphers, No. 1. Organized 1898; average earnings per week, $17; number of working hours first five days, 60; number on Saturday, as required; wages paid monthly; no idle days; no difference in wages and hours between members and non-members; cash benefits, death, insurance. President, F. A. Parent, Casselman; corresponding Secretary, D. L. Shaw, London; meets at call of General Chairman.

Name,—Brotherhood of Railway Trainmen, No. 240. Organized 1883; total membership, 90; average earnings per week, $17 to $25; average earnings per hour, 24c. to 36c.; number of working hours first five days, varies; number on Saturday, varies; wages paid monthly; average number of days idle per member during year, varies; general cause of idleness, depression of traffic; total number (union and non-union) employed at calling in locality, 150; no difference in wages and hours between members and non-members; cash benefits, death, insurance; body incorporated and registered. President, A. Wheatly, 89 Hamilton Road; Corresponding Secretary, W. Harris, 27 Victor St.; meets first and third Sundays in month.

Name,—Brotherhood of Railway Trainmen, No. 415. Organized July 13, 1891; total membership, 224; average earnings per week, $28; average earnings per hour, 32c.; number of working hours varies; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 240; no difference in wages or hours between members and non-members; cash benefits, death, $500, $1,000, $1,500; body registered. President, P. Kelleher, 850 Princess Ave.; Corresponding Secretary, W. H. Nichol, 896 Princess Ave.; meets second and fourth Sundays in month.

Name,—International Typographical Union, No. 133. Organized November, 1869; total membership, 80; average earnings per week, $16; average earnings per hour, 33 1-3c.; number of working hours first five days, news, 40; job, 44; number on Saturday, news, 8; job, 4; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, male, 125; female, 12; difference in wages or hours between members and non-members, union from $14 to $22; non-union, $9 to $15; union, 48 hours per week; non-union, 54 hours per week; cash benefits, sickness, $5 per week; death, $75 to $100; superannuation, $5 per week; technical school carried on by correspondence for members. President, H. C. Wanless, 45 Askin St.; Corresponding Secretary, W. O. Ruse, 120 Wilson Ave.; meets first Thursday in month.

Merritton.

Name,—United Brotherhood of Carpenters and Joiners, No. 1402. Organized Feb. 16, 1911; total membership, 27; average earnings per week, $20; average earnings per hour, 40c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 40; general cause of idleness, weather conditions; total

number (union and non-union) employed at trade in locality, 30; difference in wages and hours between members and non-members, non-members have no defined hours; death benefit, $100. President, J. J. Fawell, Merritton; Corresponding Secretary, R. Thompson, Box 92, Merriton; meets first and third Monday in month.

Midland.

Name,—International Longshoremen's Association, No. 189. Organized Aug. 1, 1900; total membership, secret; average earnings per week, irregular; average earnings per hour, irregular; number of working hours first five days irregular; number on Saturday, irregular; wages paid when job is finished; average number of days idle per member during year, irregular; general cause of idleness, irregular nature of work; total number (union and non-union) employed at calling in locality, 100; difference in wages and hours between members and non-members, 5c. to 15c. per hour. President, C. Howard, Midland; Corresponding Secretary, D. A. Hall, Midland; meets first and third Tuesdays in month.

Milverton.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 163. Total membership, 40; average earnings per week, foremen, $14.00; labourers, $10.20; average earnings per hour, foremen, 21c.; labourers, 17c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 70; no difference between members and non-members; cash benefits, superannuation, $20 per month; body incorporated and registered. President, R. McCord, 40 Perth St., Guelph; Corresponding Secretary, J. J. Elliott, Milverton; meets first Friday in month.

Mimico.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 756. Total membership, 32; average earnings per week, $60; average earnings per hour, 29c.; number of working hours first five days, 65; number on Saturday, 13; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 32; no difference between members and non-members; sick benefits, $3.50 per week; body incorporated and registered. President, T. Heuston, 36 Galley Ave., Toronto; Corresponding Secretary, A. Shaw, Box 191, Mimico; meets first and third Thursdays in month.

Muskoka.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 217. Total membership, 56; average earnings per week, $10.20; average earnings per hour, 17c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; no difference between members and non-members. President, J. McClackin, Crayhurst; Corresponding Secretary, R. Treadwell, Midhurst, P.O.

Niagara Falls.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 27. Total membership, 61; average earnings per week, $30; average earnings per hour,

62½c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; total number (union and non-union) employed at trade in locality, 61; death benefit, $200. President, D. McKinnon, Niagara Falls South P.O.; Corresponding Secretary, E. Jackson, 15 Kitchener St.; meets every Thursday in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 889. Organized June 4, 1860; total membership, 32; average earnings per week, $19.20; average earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; average number of idle days per member during year, 30; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 200; difference in wages and hours between members and non-members, 5c. to 15c. per hour; 6 to 12 hours per week; cash benefits, sickness, $3 per week; death, $60; superannuation, $2 per week; out of work benefits, $2.50 per week; tool benefits, $75; accident benefit, travelling expenses, legal assistance, trade privileges; body incorporated and registered. President, R. K. Lydeard, 34 Clark St.; Corresponding Secretary, W. Broomhall, 73 Centre St.; meets alternate Fridays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 713. Organized January, 1911; total membership, 195; average earnings per week about $17; average earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; average number of days idle per member during year, 50; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 250; difference in wages between members and non-members, 10 to 15 per cent.; cash benefits, death, $200; death of wife, $50; total disability, $100 to $400. President, E. E. McDowell's, Kick's Hotel; Corresponding Secretary, J. C. Kephart, 40 Main St.; meets every Wednesday in month.

Name,—Federated Association of Letter Carriers, No. 36. Organized Aug. 15, 1911; total membership, 10; average earnings per week, $12; average earnings per hour, 22½c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 10; all are members of organization; body incorporated and registered. President, E. A. Smith, 52 McRae St.; Corresponding Secretary, R. L. Ross, 81 McRae St.; meets first Wednesday in month.

Name,—Journeymen Stonecutters' Association of North America. Organized December 5, 1853; total membership, 25; average earnings per week, $27; average earnings per hour, 56¼c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; average number of days idle per member during year, 90; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 25; no difference between members and non-members; death benefit, $100. President, John Madden, Stamford; Corresponding Secretary, E. Garnell, 62 Morrison St., Niagara Falls; meets second Monday in month.

Name,—Brotherhood of Railway Trainmen, No. 379. Total membership, 78; average earnings per week, $20; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no difference between members and non-members; death benefit, amount of insurance. President, J. Winterton, 777 Ferry St.; Corresponding Secretary, C. F. Ortt, 13, Ellis St.; meets second and fourth Fridays in month.

NORTH BAY.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 29. Organized October, 1911; total membership, 20; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; average number of days idle per member during year, 120; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 30; difference in wages and hours between members and non-members, union 9 hours per day and 50c. per hour; non-union, 10 hours per day and 40c. per hour; death benefits, $50 to $300. President, Philip Adshead, North Bay; Corresponding Secretary, D. A. Buffett, Box 936, North Bay; meets first and third Mondays in month.

Name,—Brotherhood of Railway Carmen of America, No. 192. Organized 1902; total membership, 106; average earnings per week, $11.50; average earnings per hour, 23c.; number of working hours first five days, 45; number on Saturday, 5; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 150; no difference in wages and hours between members and non-members; body incorporated and registered. President, L. W. Wilson, North Bay P.O.; Corresponding Secretary, R. Moffat, North Bay P.O.; meets first Thursday and fourth Friday in month.

Name,—Order of Railway Conductors, No. 242. Organized 1890; total membership, 80; average earnings per week, $35; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 140; no difference in wages and hours between members and non-members; death benefits, $1,000, $2,000, and $3,000. President. H. F. Graham, North Bay; Corresponding Secretary, A. Brown, Box 161, North Bay.

Name,—Brotherhood of Locomotive Engineers, No. 308. Organized 1886; total membership, 85; average earnings per week, mileage basis; average earnings per hour, mileage basis; wages paid monthly; total number (union and non-union) employed at calling in locality, 140; no difference in wages and hours between members and non-members. President, W. Hallandal, North Bay; Corresponding Secretary, T. H. Turner, 183 McIntyre St.; meets first and third Monday in month.

Name,—International Brotherhood of Maintenance of Way Employees, No. 244. Organized 1900; total membership, 185; average earnings per week, $10.50; average earnings per hour, 17½c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 200; no difference in wages and hours between members and non-members; body incorporated and registered. President, A. E. Partushek, Vernon; Corresponding Secretary, D. C. Wilson, Box 58, Mattawa; meets last Saturday in month.

Name,—Brotherhood of Railway Trainmen, No. 249. Organized 1889; total membership, 260; average earnings per week, $22 to $36; number of working hours first five days, unlimited; number on Saturday, unlimited; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 260; no difference between members and non-members; death benefit, amount of insurance; body incorporated and registered. President, R. Dingwell, North Bay; Corresponding Secretary, A. Caughy, North Bay; meets first and third Sundays in month.

Oakville.

Name,—Amalgamated Society of Carpenters and Joiners. Organized July 2, 1912; total membership, 16; average earnings per week, $19.25; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 9; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 24; difference in wages between members and non-members, 5c. per hour; cash benefits, sickness, $3 per week; out of work benefits, $2.75 per week; body incorporated and registered. President, A. Burrell, Oakville P.O.; Corresponding Secretary, G. W. Wilson, Oakville P.O.; meets Tuesday.

Orangeville.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 214. Organized April, 1900; total membership, 80; average earnings per week, labourers, $10.20; foremen, $14.40; average earnings per hour, labourers, 17c.; foremen, 24c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 180; no difference between members and non-members; cash benefits, superannuation, $20 per month. President, W. J. Neil, Orangeville; Corresponding Secretary, R. B. McIntosh, 345 14th Street East, Owen Sound; meets last Saturday in March, June, September and December.

Orillia.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 18. Organized September, 1911; total membership, 28; average earnings per week, $24.30; average earnings per hour, 45c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly and fortnightly; average number of days idle per member during year, 175 to 200; general cause of idleness, weather conditions; total number (union and non-union) employed in trade in locality, 45; difference in hours between members and non-members, 1 hour in most cases; death benefits, $50 to $300; body incorporated and registered. President, Robert Graham, Cedar St.; Corresponding Secretary, Bert Glenister, Box 232, Cedar Island, Orillia; meets alternate Tuesdays in month.

Oshawa.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 20. Organized November 19, 1912; total membership, 22; average earnings per week, $24; average earnings per hour, 40c.; number of working hours first five days, 50; number on Saturday, 9; wages paid weekly; total number (union and non-union) employed at trade in locality, 40; death benefits, $150. President H. Carter, Oshawa P.O.; Corresponding Secretary, C. Nicholls, Box 319, Oshawa; meets first and third Wednesdays in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 891. Organized Sept. 30, 1912; total membership, 20; average earnings per week, $13.75; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly: total number (union and non-union) employed at trade in locality, 160; cash benefits, sickness, $3 per week; superannuation, $1.75; at the age of 60, if a member 35 years, $2 per week for life; body registered.

President, Leo Quinn, 30 Lloyd St.; Corresponding Secretary, Wm. Nicotts, 12½ King St. W; meets Tuesdays, fortnightly.

Name,—International Moulders' Union, No. 136. Organized July, 1860; total membership, 11; average earnings per week, $15; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 9; wages paid weekly and fortnightly; no idle days; total number (union and non-union) employed at trade in locality, male, 30; female, 50; no difference in wages or hours between members and non-members; cash benefits, sickness, $5.40 per week; death, $100 to $275; out of work benefits, $5.40 for 13 weeks; night school provided for members. President, A. Robinson, Oshawa; Corresponding Secretary, L. B. Hungerford, Box 32, Oshawa; meets third Thursday in month.

Ottawa.

Name,—Bricklayers' International Union, No. 7 (Stone Masons). Organized 1889; total membership, 132; average earnings per week, $13.25; average earnings per hour, 52c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 145; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 150; difference in wages and hours between members and non-members, non-members receive from 35c. to 40c. per hour; cash benefits, death $50 to $300. President, R. D. Reardon, 14 Elizabeth St.; Corresponding Secretary, A. Findlay, Jr., 313 Sunnyside Ave.; meets every second Monday in month.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 14. Organized 1887; total membership, 100; average earnings per week, $24.20; average earnings per hour, 55c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 104; general cause of idleness, bad weather, depression in trade, and lack of material; total number (union and non-union) employed at trade in locality, 125; difference in wages and hours between members and non-members, 1 hour per day and 4 on Saturday; wages from 5c. to 15c. in favour of union men; death benefits, $100 to $300. President, John Cameron, 265 Parkdale; Corresponding Secretary, M. Fleury, 214 Patterson St.; meets alternate Mondays in month.

Name,—International Brotherhood of Blacksmiths and Helpers, No. 446. Organized Jan. 27, 1912; total membership, 30; average earnings per hour, blacksmiths, 28c.; number of working hours first five days, 45 and 50; number on Saturday, 5; wages paid weekly and monthly. President, H. La Breche, 291 Breeze Hill Ave.; Corresponding Secretary, M. J. Aspinall, 522 Laurier Ave.; meets second and fourth Mondays in month.

Name,—International Brotherhood of Bookbinders, No. 173. Organized Jan. 6, 1912; total membership, 45; female not yet organized; average earnings per week, male, $18; female, $5; average earnings per hour, male, 37½c.; female, 10½c.; number of working hours first five days, 43¾; number on Saturday, 4¼; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, male, 96; female, 125; difference in wages between members and non-members, Government employes receive $18.50 per week; cash benefits, death, $75; strike benefits, single men, $5 per week; married men, $7 per week. President, Bert Thomas, 516 Laurier Ave. W.; Corresponding Secretary, W. T. McDowell, 335 James St.; meets second Friday in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 892. Organized June 4, 1860; total membership, 86; average earnings per week, $19; average earnings per hour, 38c.; number of working hours first five days, 45; number on Saturday, 5; wages paid fortnightly; general cause of idleness, lack of employment; no difference between members and non-members; cash benefits, lack of employment, $2.50 per week; sickness, $3 per week; death, $60; superannuation, $2 per week; strike, $3.75 per week; accident, $500; tool benefit, $75; body registered. President, Thomas Killoran, 198 Albert St.; Corresponding Secretary, Robert B. Lamb, 583 McLeod St.; meets first and third Thursdays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 93. Organized February, 1885; total membership, 265; average earnings per week, $17.50; average earnings per hour, 35c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly and fortnightly; average number of days idle per member during year, 35; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 550; difference in wages and hours between members and non-members, non-members work for what they can get; cash benefits, sickness, $2 per week; death, $200; death of wife, $50; disability, $400. President, C. Stinson, 206 Armstrong St.; Corresponding Secretary, E. Belair, 267 Clarence St.; meets every Thursday in month.

Name,—Brotherhood of Railway Carmen, No. 230. Total membership, 40; average earnings per hour, 22c.; number of working hours first five days, 45 to 50; number on Saturday, 5; wages paid monthly; total number (union and non-union) employed at calling in locality, male, 50; female, 1; no difference between members and non-members; body incorporated and registered. President, Charles Leach, 19 Armstrong Ave.; Corresponding Secretary, William Shaw, 123 Eccles St.; meets last Thursday in month.

Name,—Order of Railway Conductors, No. 29. Organized 1881; total membership, 85; wages paid monthly; general cause of idleness, slackness of business; total number (union and non-union) employed at calling in locality, 125; no difference between members and non-members; death benefits, $1,000, $2,000, $3,000. President, W. M. Dickson, 116A 4th Ave.; Corresponding Secretary, J. B. Morris, 305 Bronson Ave.; meets second and fourth Sundays in month.

Name,—Brotherhood of Locomotive Engineers, No. 168. Organized 1882; total membership, 98; average earnings per week, $35 to $40; average earnings per hour, mileage basis; number of working hours first five days, mileage basis, number on Saturday, mileage basis; wages paid monthly; average number of days idle per member during year, varies; general cause of idleness, slackness in traffic; total number (union and non-union) employed at calling in locality, 115; no difference between members and non-members; cash benefits, death, insurance from $1,500 to $4,500; superannuation, $30 per month. President J. Wilson, 70 Elm St.; Corresponding Secretary, J. P. Chisholm, 603 Wellington St.; meets second and fourth Sundays in month.

Name,—Brotherhood of Locomotive Engineers, No. 469. Organized March 31, 1895; total membership, 80; wages paid monthly; death benefits, amount of insurance; funeral expenses, $40. President, P. Roy, 9 2nd Ave.; Corresponding Secretary, Isaac Johnson, 137 Hawthorne Ave.; meets alternate Sundays in month.

Name,—Stationary and Operating Engineers, No. 473. Organized Aug. 29, 1911; total membership, 72; average earnings per week, $15; average earnings

per hour, 25c.; number of working hours first five days, 50; number on Saturday, 9; wages paid weekly, fortnightly and monthly; average number of days idle per member during year, 52; general cause of idleness, holidays; total number (union and non-union) employed at trade in locality, 125; no difference in wages and hours between members and non-members; school classes on engineering. President, C. W. Lewis, 21 Garland Ave.; Corresponding Secretary, C. J. Lake, 267 Preston St.; meets second and fourth Wednesdays in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen; No. 81. Organized Dec. 1, 1873; total membership, 45; wages paid monthly; total number (union and non-union) employed at calling in locality, 45; no difference between members and non-members; death benefit, amount of insurance; body incorporated and registered. President, J. J. Halden, 77 College Ave.; Corresponding Secretary, J. Eldridge, 69 Frank St.; meets second and fourth Thursdays in month.

Name,—International Association of Machinists, No. 412. Total membership, 80; average earnings per week, $16.67; average earnings per hour, 33 1-3c.; number of working hours first five days, 45; number on Saturday, 5; wages paid fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 80; no difference between members and non-members; death benefit, $50 to $200. President, E. Neumann, 65 Anderson St.; Corresponding Secretary, W. McPherson, 372 Laurier Ave. W.; meets second and fourth Fridays in month.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 223. Organized 1901; total membership, 230; average earnings per week, $10.20; average earnings per hour, 17c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; total number (union and non-union) employed at calling in locality, 230; no difference between members and non-members. President, Gilbert Owens, 102 Spadina Ave.; Corresponding Secretary, Joseph Martel, Hammond; meets fourth Sunday in month.

Name,—International Moulders' Union, No. 280. Organized Jan. 4, 1900; total membership, 27; average earnings per week, $17.10; average earnings per hour, 31⅔c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; general cause of idleness; depression in trade; total number (union and non-union) employed at trade in locality, 46; cash benefits, sickness, $5.40 per week; death, $100 to $175. President, G. McAuley, 45 Arthur St.; Corresponding Secretary, E. Taylor, 29 Sophia St.; meets first and third Thursdays in month.

Name,—American Federation of Musicians, No. 180. Organized 1904; total membership, male, 204; female, 3; average earnings per week, male, $18 to $30; female, $18 to $30; number of working hours first five days, 10 to 30; number on Saturday, 2 to 6; wages paid fortnightly; total number (union and non-union) employed at calling in locality, male, 30; female, 3, permanently employed; no difference between members and non-members; body incorporated. President, J. Delaney, Wellington Apartments, Wellington St.; Corresponding Secretary, E. J. Cockburn, 423 Lisgar St.; meets last Sunday in month.

Name,—International Brotherhood of Painters and Decorators, No. 200. Total membership, 100; average earnings per week; $16.80; average earnings per hour, 33c. to 37½c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly and fortnightly; average number of days idle per member during year, 12; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 250; difference in

wages between members and non-members, 7c. to 10c. per hour; death benefits, $50 to $300; body incorporated. President, H. Herbert, Turner St.; Corresponding Secretary, E. C. Brandt, 57 Bayswater Ave.; meets first and third Wednesday in month.

Name,—International Brotherhood of Papermakers, No. 34. Organized June 10, 1911; total membership, 51; average earnings per week, $18.62; average earnings per hour, 38c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; no idle days; death benefits, $50 to $300; body registered. President, A. Hickman, 28 Bridge St., Hull; Corresponding Secretary, A. Renaud, 656 Laurier West, Ottawa; meets first and second Sundays in month.

Name,—Operative Plasterers' International Association, No. 124. Organized Nov. 18, 1908; total membership, 65; average earnings per week, $23.50; average earnings per hour, 45c.; number of working hours first five days, 45; number on Saturday, 5; wages paid fortnightly; average number of days idle per member during year, 60 to 90; general cause of idleness, non-employment; total number (union and non-union) employed at trade in locality, 95; difference in wages and hours between members and non-members, non-union are paid from 30c. up; cash benefits, sickness, grant from local funds; death, $200. President, E. Lenton, 2 Capital Park; Corresponding Secretary, J. Herdman, 183 Creighton St.; meets first and third Tuesdays in month.

Name,—International Plasterers' Labourers' Union, No. 1. Organized Nov. 1, 1910; total membership, 45; average earnings per week, $15; average earnings per hour, 30c.; number of working hours first five days, 45; number on Saturday, 5; wages paid fortnightly; average number of days idle per member during year, 50; general cause of idleness, slackness of trade; difference in wages and hours between members and non-members, 10c. per hour; cash benefits, death, $50. President, J. Robinson, 70 Vittoria St.; Corresponding Secretary, C. Alexander, Cummings Bridge P. O., Ottawa; meets second and fourth Thursdays in month.

Name,—United Association of Journeymen Plumbers, etc., No. 71. Total membership, 190; average earnings per week, $20; average earnings per hour, 41c.; number of working hours first five days, 45 in summer, 40 in winter; number on Saturday, 5 in summer, 4 in winter; wages paid weekly and fortnightly; total number (union and non-union) employed at trade in locality, 200; cash benefits, sickness, $5 per week; death, $100; superannuation, $300 to $500. President, G. F. London, 200 Preston St.; Corresponding Secretary, Wm. Fogarty, 314 Slater St.; meets second and fourth Wednesdays in month.

Name,—International Pressfeeders' and Assistants' Union, No. 9. Organized May 29, 1909; total membership, 22; average earnings per week, $12.70; average earnings per hour, 25c.; number of working hours first five days, 43; number on Saturday, 5; wages paid fortnightly; death benefits, $100. President, J. J. Rooney, 711 King Edward Ave.; Corresponding Secretary, O. Bureau, 289 St. Andrew St.; meets second Mondays in month.

Name,—International Printing Pressmen's Union, No. 5. Organized Jan. 20, 1879; total membership, 55; average earnings per week, $19; average earnings per hour, 39¾c.; number of working hours first five days, 42½; number on Saturday, 5; wages paid weekly and fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 55; no difference in wages and hours between members and non-members; cash benefits, death, $100. Presi-

dent, D. McCann, 110 Florence St.; Corresponding Secretary, A. J. Larden, 327 Bell St.; meets third Friday in month.

Name,—Amalgamated Sheet Metal Workers, No. 47. Organized December, 1907; total membership, 90; average earnings per week, $18.50; average earnings per hour, 37½c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 100; no difference in wages and hours between members and non-members; cash benefits, death, $100; out of work benefits, dues remitted. President, W. Morgan, 23 Rosemount; Corresponding Secretary, H. F. Ken, 288 Kent St.; meets first and third Thursday in month.

Name,——Amalgamated Association of Street and Electric Railway Employees, No. 279. Organized, 1905; total membership, 250; average earnings per week, $15; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 10; wages paid fortnightly; total number (union and non-union) employed at calling in locality, 200; no difference between members and non-members; death benefits, $100 to $800. President, J. O'Brien, 211 Slater St.; Corresponding Secretary, P. Jennings, 8 Bell St.; meets first and third Fridays in month.

Name,—International Alliance of Theatrical Stage Employes, No. 95. Organized, 1902; total membership, 51; average earnings per week, $18; average earnings per hour, 30c.; number of working hours first five daays, 45; number on Saturday, 6; wages paid weekly; average number of days idle per member during year, 30; general cause of idleness, theatres closed; total number (union and non-union) employed at calling in locality, 51; all are members of organization. President, R. R. Marcil, 191 St. Andrew St.; Corresponding Secretary, D. J. Casey, 52 Gloucester St.; meets first Sunday in month.

Name,—International Steel and Copper Plate Printers, No. 6. Organized Nov. 21, 1900; total membership, 50; number of working hours first five days, 42½; number on Saturday, 4½; wages paid weekly; total number (union and non-union) employed at trade in locality, 50; cash benefits, death, $50. President, W. H. Kent, Wellington St.; Corresponding Secretary, F. Muhlig, 47 Strathcona Ave.; meets first Wednesday in month.

Name,—Journeymen Stonecutters' Association of North America. Organized Jan. 27, 1893; total membership, 58; average earnings per week, $20.68; average earnings per hour, 47c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 104; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 58; cash benefits, death, $100; body registered. President, N. Meunier, 148 Murray St.; Corresponding Secretary, J. O. Jackson, 32 Newton St.; meets second and fourth Fridays in month.

Name,—Journeymen Tailors' Union of America, No. 143. Organized 1890; total membership, male, 20; female, 9; average earnings per week, male, $13; female, $9; average earnings per hour, male, 24c.; female, 15c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly; average number of days idle per member during year, 50; general cause of idleness, depression in trade; total number (union and non-union) employed at trade in locality, male, 70; female, 90; difference in wages and hours between members and non-members, little difference, piece work; cash benefits, sickness, $5 per week; death, $100; body incorporated and registered. President, R. S.

Page, 488 Lisgar St.; Corresponding Secretary, C. Milne, 438 McLeod St.; meets third Monday in month.

Name,—Brotherhood of Railway Trainmen, No. 185. Organized, 1891; total membership, 142; average earnings per week, paid on mileage basis; conductors, $3.63; brakemen, $2.42 per hundred miles; 10 hours, or 100 miles, constitute one day; wages paid monthly; average number of days idle per member during year, uncertain; general cause of idleness, depression in freight traffic; total number (union and non-union) employed at calling in locality, 175; no difference in wages and hours between members and non-members; cash benefits, death or total disability, $500, $1,000, $1,500; body incorporated and registered. President, J. Maloney, 62 Henderson Ave.; Corresponding Secretary, H. H. Brown, 540 Lyon St.; meets alternate Sundays at 2.30 p.m.

Name,—International Typographical Union, No. 102. Organized, 1866; total membership, male, 290; female, 10; average earnings per week, male, $19; female, $19; average earnings per hour, male, 39c.; female, 39c.; number of working hours first five days, 43; number on Saturday, 5; wages paid weekly and fortnightly; no idle days; total number (union and non-union) employed at trade in locality, male, 435; female, 15; no difference in wages and hours between members and non-members; cash benefits, sickness, $4 per week; death, $75 to $400; superannuation, $5 per week; members may receive I. T. U. correspondence course; body registered. President, P. M. Draper, 112 Florence St.; Corresponding Secretary, A. E. Sheppard, 159 Stanley Ave.; meets first Saturday in month.

Name,—National Typographical Union, No. 1. Organized Oct. 6, 1906; average earnings per week, $20; average earnings per hour, 41c.; number of working hours first five days, 42½; number on Saturday, 5; wages paid fortnightly; no idle days; no difference in wages and hours between members and non-members; cash benefits, sickness, $4 per week; death, $200. President, R. Niles, 47 Mosgrove St.; Corresponding Secretary, F. J. Guthaus, 209 McKay St.; meets second Saturday in month.

Owen Sound.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 11. Organized May 10, 1900; total membership, 18; average earnings per week, $27; average earnings per hour, 50c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; average number of days idle per member, six months; general cause of idleness, no work and wet weather; total number (union and non-union) employed at trade in locality, 18; death benefits, $250; body incorporated. President, W. Malcolm, 500 5th St. E.; Corresponding Secretary, S. D. Maher, 741 9th St. E.; meets first and third Wednesdays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 1,353. Organized Aug. 6, 1912; total membership, 29; average earnings per week, $18.90; average earnings per hour, 35c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly; average number of days idle per member during year, 40; general cause of idleness, slackness of trade; death benefits, $50. President, B. Hartford, 368 16th St. E.; Corresponding Secretary, J. Eddington, 357 10th St. E.; meets second and fourth Wednesdays in month.

Name,—Canadian Association of Stationary Engineers, No. 25. Organized, 1906; total membership, 35; average earnings per week, $15; average earnings per hour, 22½c. to 25c.; number of working hours first five days, 50; number

on Saturday, 10; wages paid fortnightly; average number of days idle per member during year, 96; general cause of idleness, saw mill and cement plant close down; total number (union and non-union) employed at trade in locality, 66; difference in wages and hours between members and non-members, much about the same; educational committee for members; body registered. President, E. Hooey, 1,524 Fifth Ave. W.; Corresponding Secretary, W. J. Needham, 2,089 Third Ave. E.; meets every Thursday in month.

Name,—International Moulders' Union, No. 413. Organized April 7, 1910; total membership, 31; average earnings per week, $15 to $22; average earnings per hour, 25c. to 40c.; number of working hours first five days, 50 to 51¼; number on Saturday, 8¾ to 10; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 50; no difference between members and non-members; cash benefits, sickness, $5.40 per week; death, $100 to $200; out of work benefits, dues remitted. President, Thos. McGee, c.o. 369 10th St. E.; Corresponding Secretary, Colin Cashore, 369 10th St. E.; meets first and third Fridays in month.

Name,—Journeymen Stonecutters Association of North America. Organized Jan., 1902; total membership, 5; average earnings per week, $21.60; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; general cause of idleness, weather conditions; cash benefits, death, $100. President, G. A. Perkins, 830 Sixth Ave. W.; Corresponding Secretary, E. Gaskell, 1132 Fourth Ave. E.; meets second and fourth Fridays in month.

Palmerston.

Name,—Order of Railway Conductors, No. 492. Organized May 20, 1906; total membership, 8; average earnings per week, $28; average earnings per hour, 48c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 25; no difference in wages and hours between members and non-members; cash benefits, death, up to $3,000; body incorporated and registered. President, A. B. Garretson, Cedar Rapids, Iowa; Corresponding Secretary, D. A. Cox, 15 Raglin St.; meets second Sunday in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 181. Organized 1883; total membership, 50; average earnings per week, $17; average earnings per hour, 25c.; number of working hours first five days, mileage system; number on Saturday, mileage system; wages paid monthly; general cause of idleness, depression of traffic; total number (union and non-union) employed at calling in locality, 60; no difference in wages and hours between members and non-members; cash benefits, death, $500 to $3,000; body incorporated and registered. President, A. Dickel, Palmerston; Corresponding Secretary, T. Lee, Box 122, Palmerston; meets first and third Sundays in month.

Parry Sound.

Name,—International Association of Machinists, No. 518. Organized June, 1908; total membership, 20; average earnings per week, $19; average earnings per hour, 33c.; number of working hours first five days, 50; number on Saturday, 9; wages paid monthly; average number of days idle per member during year, 15; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 20; no difference in wages and hours between

members and non-members; cash benefits, death, $50 to $200; body incorporated and registered. President, W. Heitman, Parry Sound; Corresponding Secretary, J. H. Jones, Box 423, Parry Sound; meets first and third Tuesdays in month.

Name,—International Brotherhood of Maintenance of Way Employees, No. 447. Organized April 5, 1909; total membership, 120; average earnings per week, $12; average earnings per hour, 20c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 120; body incorporated and registered. President, J. Darling, Shawanaga P.O.; Corresponding Secretary, C. Smith, Box 30, Parry Sound; meets last Saturday in each second month commencing last Saturday in January, 1913.

Pembroke.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 221. Total membership, 18; average earnings per week, $10.20; average earnings per hour, 17½c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; difference in wages between members and non-members, 5c. per day. President, J. Murphy, Pembroke; Corresponding Secretary, A. Austin, Pembroke.

Peterborough.

Name,—Journeymen Barbers' International Union, No. 402. Organized 1902; total membership, 30; average earnings per week, $13; average earnings per hour, 21c.; number of working hours first five days, 50; number on Saturday, 14; no idle days; total number (union and non-union) employed at trade in locality, 30; all are members of organization; cash benefits, sickness, $5 per week; death, $500; body incorporated and registered. President, G. A. Campbell, 176 Charlotte St.; Corresponding Secretary, G. V. Hall, 436 George St.; meets last Monday in month.

Name,—Bartenders' Union, No. 293. Organized Feb. 16, 1913; total membership, 31; number of working hours first five days, 40 to 55; wages paid weekly; total number (union and non-union) employed at calling in locality, 24; all are members of organization; death benefit, $50; body incorporated. President, T. Palmer, 384 Queen St.; Corresponding Secretary, J. W. Chambers, Grand Hotel; meets last Saturday in month.

Name,—Bricklayers' and Masons' International Union, No. 17. Organized November, 1901; total membership, 45; average earnings per week, $21.60; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 47; difference in wages and hours between members and non-members, non-members work 9 hours per day; cash benefits, death, $200. President, H. Phillips, Roger St.; Corresponding Secretary, W. Stevens, Box 778, Peterborough; meets first and third Tuesdays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 672. Organized December 11, 1900; total membership, 12; average earnings per week, $15; average earnings per hour 27½c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly, average number of days idle per

member during year, 60; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 200; difference in wages and hours between members and non-members, non-members receive 25c. per day less; death benefit, $200; body incorporated and registered. President, John Maharry, Box 505 North Monoghan; Corresponding Secretary, G. Sloan, 518 Chamberlain St.; meets second Monday in month.

Name,—International Brotherhood of Electrical Workers, No. 261. Organized September, 1912; total membership, 300; average earnings per week, $17 to $9, according to class; average earnings per hour, 30c. to 16½c.; number of working hours first five days, 50; number on Saturday, 5; wages paid fortnightly; no idle days; no difference between members and non-members; cash benefits, death, $100 to $300; out of work benefits, $5 to $8 per week; special work for members, constitution calls for lectures on electricity; body incorporated and registered. President, W. A. Stazicker, Peterborough; Corresponding Secretary. E. Tucker, 463 Albert St.; meets second and fourth Wednesdays in month.

Name,—Federal Association of Letter Carriers, No. 22. Total membership, 13; average earnings per week, $13.40; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 13; body incorporated. President, J. G. Grisdale, 493 Gross St.; Corresponding Secretary, F. J. Edwards, 496 College St.; meets first Wednesday in month.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 211. Total membership, 40; average earnings per week, foremen, $14.40; labourers, $11.40; average earnings per hour, foremen, 24c.; labourers, 17c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 40; no difference in wages and hours between members and non-members; cash benefits, superannuation, $20 per month; body incorporated and registered. President, J. Daly, 146 Aylmer St.; Corresponding Secretary, G. A. Tummon, Leaside, *via* Leaside Junction; meets at call of President.

Name,—International Moulders' Union, No. 191. Organized 1874; total membership, 93; average earnings per week, $17.50; average earnings per hour, 32c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly and fortnightly; total number (union and non-union) employed at trade in locality, 93; all are members of organization; cash benefits, sickness, $5.40 per week; death, $100 to $200; out of work benefits, dues remitted. President, W. Weese, 473 McDonnell St.; Corresponding Secretary, W. A. Mowry, 457 Cedar St.; meets first and third Thursdays in month.

Name,—Pattern Makers' League of North America. Organized Oct. 17, 1900; total membership, 41; average earnings per week, $19.25: average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 5; wages paid fortnightly; average number of days idle per member during year, 12; total number (union and non-union) employed at trade in locality, 50; cash benefits, sickness, $4 per week; death, $50 to $400; superannuation, $12 to $16 per month. President, E. G. Hardie, 557 Patterson St.; Corresponding Secretary, Harry Carter, Box 844; meets second and fourth Thursdays in month.

Name,—Journeymen Tailors' Union of America, No. 23. Organized June, 1902; total membership, male, 8; female, 17; average earnings per week, male, $15 to $20; female, $7 to $10; average earnings per hour, male, 25c.; female, 15c.; number of working hours first five days, 50 to 60; number on Saturday, 10 to 14;

wages paid weekly; average number of days idle per member during year, 36; general cause of idleness, slackness of trade; total number (union and non-union) employed at trade in locality, male, 8; female, 17; cash benefits, sickness, $5 per week; death, $25 to $100; body incorporated and registered. President, C. Strimas, Simcoe St.; Corresponding Secretary, A. E. Ward, 516 Water St.; meets fourth Tuesday in month.

Name,—United Textile Workers of America (Carpet Weavers), No. 663. Organized January, 1908; total membership, 40; average earnings per week, $15; average earnings per hour, 30c.; number of working hours first five days, 50; number on Saturday, 5; wages paid fortnightly; average number of days idle per member during year, 30; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, male, 100; female, 50; death benefit, $50. President, Geo. Skelding, 30 Ware St.; Corresponding Secretary, Thos. Darch, c.o. Claraday Post Office; meets third Monday in month.

Name,—International Typographical Union, No. 248. Organized Jan. 9, 1902; total membership, 45; average earnings per week, machine operators, $17; hand compositors, $14; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; total number (union and non-union) employed at trade in locality, 46; cash benefits, death, $400; superannuation, $5 per week; body incorporated. President, J. P. Dillon, 303 Mark St.; Corresponding Secretary, C. Hammacott, 413 Bethune St.; meets first Saturday in month.

Porcupine.

Name,—Western Federation of Miners, No. 145. Organized April 23, 1910; total membership, 884; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly and monthly; difference in wages between members and non-members, 25c. to 50c. in mines favourable to organization; cash benefits, sickness, $1 per day; death, $50; reading room, evening classes and library for use of members. President, M. P. Guinney, Box 521, South Porcupine; Corresponding Secretary, M. C. McDonald, Box 521, South Porcupine; meets Sunday and Thursday in week.

Port Arthur.

Name,—Bartenders' International League, No. 757. Total membership, 55; average earnings per week, $18.75 and board; average earnings per hour, 43c.; number of working hours first five days, 37½; number on Saturday, 5½; wages paid monthly; total number (union and non-union) employed at calling in locality, 55; all are members of organization; cash benefits, sickness, $5 per week; death, $50; body incorporated and registered. President, J. H. Walker, 67 Machar Ave.; Corresponding Secretary, L. Beninger, 115 Court St.; meets first and third Sundays in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 893. Organized Aug. 10, 1910; total membership, 32; average earnings per week, $25; average earnings per hour, 50c.; number of working hours first five days, 45; number on Saturday, 5; wages paid fortnightly; average number of days idle per member during year, 100; general cause of idleness, winter weather; total number (union and non-union) employed at trade in locality, 200; difference in wages and hours between members and non-members, non-members 35c. to 40c., 10 hours per day,

including Saturday; cash benefits, sickness, $3 per week; death, $60; superannuation, $2 per week; out of work benefits, $2.50 per week; body incorporated and registered. President, P. C. Manning, 42 Ontario St.; Corresponding Secretary, W. D. Mantle, 218 Banning St.; meets second and fourth Mondays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 285. Organized March, 1906; total membership, 35; average earnings per week, $27; average earnings per hour, 50c.; number of working hours first five days, 45; number on Saturday, 5; wages paid fortnightly; average number of days idle per member during year, 60; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, about 200; difference in wages and hours between members and non-members, non-members work 10 hours per day and receive 40c. to 45c. per hour; cash benefits, death, $100 to $400; death of wife, $25 to $50; total disability, $100 to $400. President, H. V. Wilson, 227 Wolseley St.; Corresponding Secretary, W. J. Robertson, 108 Court St. S.; meets first and third Mondays in month.

Name,—Brotherhood of Railway Carmen, No. 347. Organized December, 1906; total membership, 31; average earnings per week, $15; average earnings per hour, 30c.; number of working hours first five days, 47½; number on Saturday, 5; wages paid monthly; total number (union and non-union) employed at calling in locality, 35; no difference between members and non-members. President, D. T. Brooks, 150 Pine St.; Corresponding Secretary, H. Cardy, 166 Secord St.; meets third Wednesday in month.

Name,—Order of Railway Conductors, No. 536. Organized June 14, 1908; total membership, 34; average earnings per week, varies; average earnings per hour, 41c.; number of working hours first five days, irregular; number on Saturday, irregular; wages paid monthly; general cause of idleness, irregular hours of work; total number (union and non-union) employed at calling in locality, 150; no difference in wages or hours between members and non-members; cash benefits, death, $2,000. President, A. Bolduc, 354 Bay St.; Corresponding Secretary, J. Ferguson, 142 Secord St.; meets second and fourth Sundays in month.

Name,—International Brotherhood of Electrical Workers, No. 367. Organized Dec. 1, 1911; total membership, 35; average earnings per week, $21; average earnings per hour, 39c.; number of working hours first five days, 50 in summer, 45 in winter; number on Saturday, 5 in summer, 9 in winter; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 55; difference in wages and hours between members and non-members, probably no difference; cash benefits, sickness, $5 per week; death, $100; body incorporated and registered. President, A. McRae, Western Hotel; Corresponding Secretary, C. Lambert, 125 Algoma St. S.; meets second and fourth Wednesdays in month.

Name,—Canadian Association of Stationary Engineers, No. 29. Organized April, 1911; total membership, 27; average earnings per week, $20; average earnings per hour, 33 1-3c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; general cause of idleness, winter season; total number (union and non-union) employed at calling in locality, 50; no difference between members and non-members; educational classes for members; body registered. President, J. Insley, 370 Dufferin St.; Corresponding Secretary, S. Smith, 506 Van Norman St.; meets first and third Fridays in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 593. Total membership, 60; average earnings per week, $25; number of working hours first

five days, mileage basis; number on Saturday, mileage basis; wages paid monthly; death benefit, amount of insurance. President, E. C. Schaubacher, 310 Fort Street; Corresponding Secretary, W. R. McDonald, over Bank of Hamilton, Port Arthur; meets second and fourth Fridays in month.

Name,—International Longshoremen's Association (Coal Handlers), No. 319. Organized March 18, 1911; total membership, 146; average earnings per week, $15; average earnings per hour, 30c.; number of working hours first five days, varies; number on Saturday, varies; wages paid monthly; average number of days idle per member during year, 130; general cause of idleness, close of navigation; total number (union and non-union) employed at calling in locality, 350; no difference in wages or hours between members and non-members; body incorporated and registered. President, F. Colosino, 521 McLaughlin St.; Corresponding Secretary, J. J. Tiboni, 521 McIntosh St., Fort William; meets third Saturday in month.

Name,—International Association of Machinists, No. 820. Total membership, 16; average earnings per week, $20; average earnings per hour, 35c.; number of working hours first five days, 47½; number on Saturday, 5; wages paid weekly and monthly; no idle days; total number (union and non-union) employed at trade in locality, 30; no difference in wages or hours between members and non-members; cash benefits, death, a bonus from headquarters; out of work benefits, dues remitted. President, A. Boyd, 368 Wiley St.; Corresponding Secretary, C. Munn; meets third Tuesday in month.

Name,—International Brotherhood of Steam Shovel and Dredge Men, No. 9. Organized, 1904; total membership, 78: average earnings per week, $18; number of working hours first five days, firemen, watchmen and oilers, 60; deckhands and seamen, 82½; number on Saturday, 12 for all; wages paid monthly; average number of days idle per member during year, 90; general cause of idleness, weather conditions; total number (union and non-union) employed at calling in locality, 90; no difference between members and non-members; cash benefits, sickness, members kept in good standing; club room for members; body incorporated and registered. President, John Quackenbush, 111 South Brodie St.; Corresponding Secretary, O. H. York, Box 70, Fort William; meets fourth Saturday in month.

Name,—Journeymen Stonecutters' Association of North America. Organized Dec. 5, 1853; total membership, 16; average earnings per hour, 60c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 5 months; general cause of idleness, winter weather and slackness in trade; total number (union and non-union) employed at trade in locality, 16; cash benefits, death, $100; body incorporated and registered. President, J. Lockie, 18 Catharine St.; Corresponding Secretary, R. Paton, 109 Empire Ave.; meets second and fourth Tuesdays in month.

Name,—International Typographical Union. No. 575. Organized Oct. 1, 1907; total membership, 27; average earnings per week, $23; average earnings per hour, 47c.; number of working hours first five days, 43; number on Saturday, 5; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 27; cash benefits, sickness, $4 per week; death, $75 to $100; old age pension for members unable to earn livelihood. President, W. E. Lawrence, Centre St.; Corresponding Secretary, T. H. Wynn, Box 480, Port Arthur; meets second Tuesday in month.

Port Hope.

Name,—International Moulders' Union, No. 189. Organized 1881; total membership, 48; average earnings per week, $24; average earnings per hour, 45c.; number of working hours first five days, 50; number on Saturday, 10; wages paid fortnightly; average number of days idle per member during year, 40; general cause of idleness, depression in trade and stock taking; total number (union and non-union) employed at trade in locality, 48; cash benefits, sickness, $5.40 per week; death, $100 to $200; out of work benefits, dues remitted. President, O. Moffat, Port Hope P. O.; Corresponding Secretary, R. Bennett, Box 84, Port Hope; meets first and third Mondays in month.

Preston.

Name,—International Moulders' Union, No. 314. Organized May 9, 1900; total membership, 120; average earnings per week, $20; average earnings per hour, 35½c.; number of working hours first five days, 50; number on Saturday, 9; total number (union and non-union) employed at trade in locality, 130; difference in wages and hours between members and non-members, 35 per cent.; cash benefits, sickness, $5 per week; death, $100 to $200; out of work benefits, dues remitted. President, W. Kennedy, Preston; Corresponding Secretary, J. McKenna, Box 699, Preston; meets first and third Wednesdays in month.

Name,—Metal Polishers', Buffers', Platers' and Brass Workers' International Union, No. 27. Total membership, about 20; average earnings per week, $18 to $20; number of working hours first five days, 40 to 50; number on Saturday, 9; wages paid weekly; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, about 20; all are members of organization; cash benefits, death, $50 to $200; out of work benefits, 4 week's dues; body incorporated and registered. President, A. Wright, Preston; Corresponding Secretary, F. A. Schartzberg, Box 374, Preston; meets third Tuesdays in month.

Name,—Stove Mounters' International Union, No. 11. Organized Oct. 20, 1911; total membership, 22; average earnings per week, $15; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 40; general cause of idleness, depression in trade; total number (union and non-union) employed at trade in locality, 22; all are members of organization; cash benefits, sickness, dues remitted; death, $100; out of work benefits, dues remitted. President, H. Storey, Waterloo St.; Corresponding Secretary, J. A. Tobin, Preston; meets first and third Fridays in month.

Rainy River.

Name,—Brotherhood of Railway Carmen, No. 436. Organized Oct. 5, 1911; total membership, 32; average earnings per week, $14; average earnings per hour, 26c.; number of working hours first five days, 50; number on Saturday, 5; from April to October, after that 9; wages paid monthly; average number of days idle during year, 15; general cause of idleness, sickness and lack of work; total number (union and non-union) employed at calling in locality, 32; all are members of organization; body incorporated and registered. President, W. J.

Turner, Rainy River; Corresponding Secretary, B. J. Franks, Box 49, Rainy River; meets third Friday in month.

Name,—Order of Railway Conductors, No. 30. Organized March 1, 1910; total membership, 45; average earnings per week, $40; average earnings per hour, 46c.; number of working hours first five days, mileage basis; number on Saturday, mileage basis; wages paid monthly; general cause of idleness, business slack; total number (union and non-union) employed at calling in locality, 50; no difference in wages and hours between members and non-members; body incorporated and registered. President, A. B. Garretson, Cedar Rapids, Iowa; Corresponding Secretary, S. McElroy, Box 236, Rainy River; meets first and third Sundays in month.

Name,—Canadian Brotherhood of Railway Employees, No. 51. Organized February, 1912; total membership, 10; average earnings per week, $12.50; number of working hours first five days, 55; number on Saturday, 11; Sunday, 11 for six months; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, male, 14; female, 1; no difference between members and non-members; body registered. President, F. Potter, Rainy River; Corresponding Secretary, D. McLennan, General Delivery, Rainy River; meets third Friday in month.

Name,—Brotherhood of Locomotive Engineers, No. 749. Organized March 29, 1908; total membership, 32; average earnings per week, $30; average earnings per hour, 50c.; number of working hours first five days, irregular; number on Saturday, irregular; wages paid monthly; general cause of idleness, fluctuations of traffic; total number (union and non-union) employed at calling in locality, 32; no difference in wages and hours between members and non-members; cash benefits, death, amount of insurance; body incorporated and registered. President, H. Mills, Rainy River; Corresponding Secretary, D. P. Johnson, Box 154, Rainy River; meets second and fourth Thursdays in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 750. Organized, 1908; total membership, 50; average earnings per week, $25 to $30; average earnings per hour, mileage basis; wages paid monthly; general cause of idleness, slackness of trade; total number (union and non-union) employed at calling in locality, 56; no difference in wages or hours between members and non-members; cash benefits, death, insurance; body incorporated and registered. President, W. D. Douglas, Box 189; Corresponding Secretary, W. J. Smith, Box 188, Rainy River; meets second and fourth Thursdays in month.

Name,—Brotherhood of Railway Trainmen, No. 828. Organized, 1883; total membership, 105; average earnings per week, $25; average earnings per hour, 42c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; general cause of idleness, slackness in business; no difference between members and non-members. President, V. L. Bartlett, Rainy River; Corresponding Secretary, R. Whitney, Box 162, Rainy River; meets second and fourth Sundays in month.

St. Catharines.

Name,—Barbers' Union, No. 1. Organized, 1886; total membership, 26; average earnings per week, $13; average earnings per hour, 17½c.; number of working hours first five days, 60; number on Saturday, 16; wages paid weekly; total number (union and non-union) employed at trade in locality, 28; cash benefits, sickness, $3 per week; death, $25. President, H. Stutt, St. Paul St.;

Corresponding Secretary, A. Haynes, 293 St. Paul St.; meets first and third Mondays in month.

Name,—International Brewery Workmen, No. 305. Organized, 1910; total membership, 19; average earnings per week, $11; average earnings per hour, 20c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly; total number (union and non-union) employed at calling in locality, 21; no difference between members and non-members; cash benefits, sickness, exempt from union fees; incorporated. President, W. Wiley, Cherry St.; Corresponding Secretary, G. Whitton, 34 Maple St.; meets third Friday in month.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 4. Organized June 6, 1882; total membership, 101; average earnings per week, $17.50; average earnings per hour, 50c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 90; general cause of idleness, weather conditions; all are members of organization; death benefits, $50 to $200; recreation room for members. President, J. A. Powder, 11 Raymond St.; Corresponding Secretary, A. E. Greenlaw, 29 Dacotah St.; meets every Tuesday in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 895. Organized, 1896; total membership, 18; average earnings per week, $15; average earnings per hour, 40c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly and fortnightly; average number of days idle per member during year, 40; general cause of idleness, due to the American Brotherhood of Carpenters refusing to work with our members; total number (union and non-union) employed at trade in locality, about 200; no difference in wages and hours between members and non-members; cash benefits, sickness, $3 per week; death, $60; superannuation, $2.50 per week; out of work benefits, $2.50 per week; accident benefit up to $500; body registered in Great Britain. President, J. Trueman, 74 Concord Ave.; Corresponding Secretary, J. E. Haine, 61 Division St.; meets alternate Thursdays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 38. Organized February, 1883; total membership, 165; average earnings per week, $18; average earnings per hour, 35c. to 40c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 20; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 200; difference in wages and hours between members and non-members, 5c. to 10c. per hour; cash benefits, death, $200; death of wife, $50; disability, $400; lectures on trade lines. President, J. B. Dunklee, 35 George St.; Corresponding Secretary, J. Carty, 19 Cherry St.; meets every Friday in month.

Name,—Cigarmakers' International Union, No. 140. Organized Aug. 24, 1881; total membership, male, 23; female, 1; average earnings per week, male, $14; female, $14; average earnings per hour, male, 29½c.; female, 29½c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, male, 23; female, 1; cash benefits, sickness, $5 per week; death, $50 to $550; out of work benefits, $3 per week; body registered. President, W. Haynes, 13½ Cherry St.; Corresponding Secretary, L. T. Coyle, 138 Church St.; meets first Saturday in month.

Name,—International Brotherhood of Electrical Workers, No. 303. Organized August 1, 1912; total membership, 16; average earnings per week, $10.75; aver-

age earnings per hour, 27c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly and fortnightly; average number of days idle per member during year, about 30 to 60; general cause of idleness, too much competition for amount of work; total number (union and non-union) employed at calling in locality, 25; difference between members and non-members, about 5 hours per week, wages about same; cash benefits, superannuation, from $1 to $3, according to length of service. President, R. W. Jones, 23 Ontario St.: Corresponding Secretary, Geo. Flower, 101 Vine St.; meets first and third Mondays in month.

Name,—Federated Association of Letter Carriers, No. 17. Organized Sept. 13, 1908; total membership, 11; average earnings per week, $13.50; average earnings per hour, 25c.; number of working hours first five days, 45; number on Saturday, 9; no idle days; total number (union and non-union) employed at calling in locality, 12; no difference in wages and hours between members and non-members; body incorporated. President, T. Henderson, 2 Nelson St.; Corresponding Secretary, F. S. Whitten, 36 Academy St.; meets last Friday in month.

Name,—International Association of Machinists, No. 268. Organized, 1899; total membership, 45; average earnings per week, $16; average earnings per hour, 27½c.; number of working hours first five days, 50; number on Saturday, 5 to 8½; wages paid fortnightly; general cause of idleness, breaking of electric energy or water out of canal; total number (union and non-union) employed at trade in locality, 45; cash benefits, death, $200; out of work benefits, dues remitted; body incorporated and registered. President, W. H. Dewey, 110 Welland Ave.; Corresponding Secretary, J. A. Rothwell, 58 Lake St.; meets second and fourth Fridays in month.

Name,—International Moulders' Union, No. 385. Organized Dec. 5, 1905; total membership, 46; average earnings per week, $18; average earnings per hour, 30c.; number of working hours first five days, 50; number on Saturday, 10; wages paid weekly and fortnightly; total number (union and non-union) employed at trade in locality, male, 150; female, 10; no difference in wages or hours between members and non-members; cash benefits, sickness, $5.40 per week; death, $200; out of work benefits, dues remitted. President, H. P. Grey, 63½ Queenston St.; Corresponding Secretary, F. Keene, 39 Albert St.; meets second and fourth Fridays in month.

Name,—Brotherhood of Painters, Decorators and Paperhangers, No. 407. Organized Aug. 1, 1901; total membership, 48; average earnings per week, $17.50; average earnings per hour, 35c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 60 to 80; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 50 to 60; difference in wages and hours between members and non-members, 3c. to 5c. per hour; cash benefits, death, $50 to $300; total disability, same amount as in case of death; body incorporated. President, C. O'Donnell, 6 Court St.; Corresponding Secretary, W. D. Outram, 30 Nelson St.; meets second and fourth Wednesdays in month.

Name,—Metal Polishers', Buffer's, Platers' and Brass Workers' International Union, No. 97. Organized, 1902; total membership, 16; average earnings per week, $16.50; average earnings per hour, 26c. to 28½c.; number of working hours first five days, 50; number on Saturday 5, July and August, 8 balance of year; wages paid weekly and fortnightly; average number of days idle per member

during year, 30; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, about 40; no difference in wages and hours between members and non-members; cash benefits, death, $50 to $200; out of work benefits, dues remitted. President, L. Tufford, 29 Catharine St.; Corresponding Secretary, L. Shaw, 159 Russell Ave.; meets first and third Fridays in month.

Name,—Journeymen Tailors' Union of America, No. 235. Organized Aug., 1896; total membership, male, 20; female, 14; average earnings per week, male, $12; female, $7; average earnings per hour, male, 25c.; female, 15c.; number of working hours first five days, 50; number on Saturday, 10; wages paid weekly; average number of days idle per member during year, 60; general cause of idleness, slack trade; total number (union and non-union) employed at trade in locality, male, 20; female, 14; no difference in wages and hours between members and non-members; cash benefits, sickness, $5 per week; death, $25 to $100. President, F. J. Coyle, Grand Central Hotel, St. Paul St.; Corresponding Secretary, J. A. Wiley, 9 Louisa St.; meets first Wednesday in month.

Name,—International Typographical Union, No. 416. Organized May, 1901; total membership, 25; average earnings per week, $16; average earnings per hour, 33½c.; number of working hours first five days, 42½, number on Saturday, 5½; wages paid weekly; total number (union and non-union) employed at trade in locality, 25; cash benefits, death, $400; superannuation, $5 per week. President, R. G. Widdicombe, c-o Barber and Co., Ontario St.; Corresponding Secretary, D. Marshall, 33 Henry St.; meets last Monday in month.

St. Mary's.

Name,—Journeymen Stonecutters' Association of North America. Total membership, 5; average earnings per week, $21.60; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; general cause of idleness, weather conditions; all are members of organization; death benefit, $100; body incorporated and registered. President, S. Griggs, Washington, D.C.; Corresponding Secretary, W. McCauley, Box 811, St. Mary's; meets first and third Mondays in month.

St. Thomas.

Name,—Journeymen Barbers' Int. Union, No. 222. Organized 1897; total membership, 13; average earnings per week, $15; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 13; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 21; difference in wages between members and non-members, union men get about $4 more per week than non-union; cash benefits, sickness, $5 per week; death, $100 to $500; strike benefit, $7 per week; body incorporated and registered. President, H. E. Walsh, 715 Talbot St.; Corresponding Secretary, J. E. Kelly, 494 Talbot St.; meets last Thursday in month.

Name,—Canadian Blacksmiths' and Helpers' Union, No. 94. Organized December, 1912; total membership, 17; average earnings per hour, blacksmiths, 32c.; helpers, 20c.; number of working hours first five days, blacksmiths, 45; helpers, 50; number on Saturday, blacksmiths, 9; helpers, 10; wages paid monthly; total number (union and non-union) employed at trade in locality, 17; body incorporated and registered. President, John Lumley, 11 West Ave.; Corresponding Secretary, John Wall, 84 Chestnut St.; meets first and second Tuesdays in month.

Name,—Brotherhood of Boilermakers and Iron Ship Builders of America, No. 413. Organized January, 1905; total membership, 34; average earnings per week, $18; average earnings per hour, 34c.; number of working hours first five days, 45; number on Saturday, 9; wages paid monthly; no idle days; total number (union and non-union) employed at trade in locality, 50; cash benefits, death, $50 to $100; out of work benefits, dues remitted. President, J. C. King, 35 Balaclava St.; Corresponding Secretary, F. Roberts, 61 Wilson Ave.; meets second and fourth Tuesdays in month.

Name,—Bricklayers' and Masons' International Union, No. 8. Organized 1885; total membership, 26; average earnings per week, $18; average earnings per hour, 42c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 29; difference in wages and hours between members and non-members, non-members work 10 hours for 9 hours pay; cash benefits, death, $50 to $300; body incorporated and registered. President, J. A. Murray, Fifth Ave.; Corresponding Secretary, O. Beal, 85 Erie St.; meets second and fourth Wednesdays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 1,798. Total membership, 50; average earnings per week, $15; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 10; wages paid weekly and fortnightly; average number of days idle per member during year, 60; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 170; no difference between members and non-members; death benefit, $100 to $500; body registered. President, C. Smith, 22 Walnut St.; Corresponding Secretary, C. Willcox, 5 Wolfe St.; meets first and third Fridays in month.

Name,—Cigarmakers' International Union, No. 420. Organized 1899; total membership, male, 12; female, 2; average earnings per week, male, $11; female, $11; number of working hours first five days, 40; number on Saturday, 5; total number (union and non-union) employed at trade in locality, male, 15; female, 10; difference in wages and hours between members and non-members, about $4 or $5; cash benefits, sickness, $5 per week; death, $50 to $500; out of work benefits, $3 per week at certain times in the year. President, G. Haslam, 100 Curtis St.; Corresponding Secretary, F. Roberts, 7 Balfour St.; meets first Friday and third Saturday in month.

Name,—Order of Railway Conductors, No. 13. Organized July 6, 1868; total membership, 101; average earnings per week, $30; average earnings per hour, 36c.; wages paid monthly; all are members of organization; cash benefits, sickness, $5 and $10 per week; death, amount of insurance. President, W. H. Ryan, 49 Mitchell St.; Corresponding Secretary, K. Hastings, 48 Southwick St.; meets second and fourth Sundays in month.

Name,—Brotherhood of Locomotive Engineers, No. 132. Organized April, 1876; total membership, 170; average earnings per week, $30; average earnings per hour, 45c.; number of working hours first five days, 50, or by trip; number on Saturday, 10, or by trip; wages paid monthly; average number of days idle per member during year, none in passenger, varies in freight; total number (union and non-union) employed at calling in locality, 170; no difference in wages and hours between members and non-members; cash benefits, sickness, weekly benefits; superannuation after 10 years 1 per cent.; body incorporated and registered. President, T. Quick, Queen's Hotel; Corresponding Secretary, T. Duffey, Wellington St.; meets every Monday in month.

Name,—Brotherhood of Locomotive Engineers, No. 529. Organized 1904; total membership, 52; average earnings per week, $32; average earnings per hour, 38c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; body incorporated and registered. President, J. McGregor, 23 Yarwood St.; Corresponding Secretary, A. H. Martin, 52 Manitoba St.; meets every Tuesday in month.

Name,—Brotherhood of Locomotive Engineers, No. 661. Total membership, 45; average earnings per hour, 38c.; wages paid monthly; total number (union and non-union) employed at calling in locality, 60; no difference in wages and hours between members and non-members; cash benefits, death, mutual insurance; superannuation, pension plan. President, C. L. Wilson, 43 Southwick St.; Corresponding Secretary, H. W. Buckpitt, 45 Mitchell St.; meets every Wednesday in month.

Name,—Amalgamated Society of Engineers, No. 754. Organized Jan. 1, 1851; total membership, 13; average earnings per week, $17.75; average earnings per hour, 35½c.; number of working hours first five days, 45; number on Saturday, 5; wages paid monthly; no difference between members and non-members; cash benefits, sickness, $2.50 per week; death, $60; superannuation, $1.75 to $2.50; out of work benefits, $2.50; railroad fare paid up to 7.50; benevolent grants, from $5 to $50; disability through accident, $500; body incorporated and registered. President, Thos. Birchall, St. Thomas; Corresponding Secretary, R. Edleston, 1 Smith's Avenue; meets fortnightly, dating from July 7, 1913.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 5. Organized 1878; total membership, 325; average earnings per week, mileage basis; average earnings per hour, 29½c.; number of working hours, mileage basis; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 350; no difference between members and non-members; cash benefits, sickness, $10 per week; death, 500 to $3,000; body incorporated. President, R. V. Anthony, 8 Myrtle St.; Corresponding Secretary, W. W. Scott, 24 Maple St.; meets Fridays at 2 p.m.

Name,—Federated Association of Letter Carriers, No. 23. Organized January, 1909; total membership, 11; average earnings per week, $15; average earnings per hour, 31c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; total number (union and non-union) employed at calling in locality, 11. President, Joseph McDonald, 132 Alma St.; Corresponding Secretary, C. Shuchcombe, 37 Owaissa St.

Name,—International Association of Machinists, No. 294. Reorganized Jan., 1906; total membership, 135; average earnings per week, $18; average earnings per hour, 35½c.; number of working hours first five days, 45; number on Saturday, 9; wages paid monthly; general cause of idleness, retrenchment plan of company; total number (union and non-union) employed at trade in locality, 150; difference in wages and hours between members and non-members, non-members work 10 hours per day and receive 70c. per day less; cash benefits, sickness, optional with local; death $200; strike pay, married men, $8 per week; single men, $6 per week; lectures occasionally and a technical monthly journal. President, J. H. Gray, Forest Ave.; Corresponding Secretary, J. Stewart, 56 Redan St.; meets first and third Tuesdays in month.

Name,—International Association of Machinists' Helpers and Labourers, No. 946. Organized March 17, 1913; total membership, 26; average earnings per week, $9.70 to $11.80; average earnings per hour, 18c. to 22c.; number of working hours first five days, 45; number on Saturday, 9; wages paid monthly; total number (union and non-union) employed at trade in locality, 39; no difference between

members and non-members; body incorporated and registered. President, Charles Kaye, 17 Maple St.; Corresponding Secretary, G. E. Brandon, 7 Arthur Ave.; meets every second Monday in month.

Name,—International Association of Steam Fitters and Helpers, No. 107. Organized 1910; total membership, 1; average earnings per week, $17; average earnings per hour, 27½c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; average number of days idle per member during year, 15; total number (union and non-union) employed at trade in locality, 20; no difference between members and non-members; cash benefits, death, $150; out of work benefits, $5 per week; body registered. President, Chas. M. Doritty, 8 Maple St.; Corresponding Secretary, Chas. M. Doritty (Acting); meets first and third Wednesdays in month.

Name,—Brotherhood of Railway Signalmen, No. 27. Organized June 8, 1910; total membership, 51; average earnings per month, $55, $65, and $80; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 66; no difference between members and non-members; body incorporated and registered. President, W. L. Fallis, 44 Erie St.; Corresponding Secretary, L. Hoover, Ridgetown; meets third Wednesday in month.

Name,—Journeymen Tailors' Union of America, No. 141. Organized 1890; total membership, male, 16; female, 17; average earnings per week, male, $12; female, $7; number of working hours first five days, 50; number on Saturday, 10; average number of days idle per member during year, 60; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, male, 20; female, 25; difference in wages between members and non-members, non-members receive from $2 to $5 less than members; cash benefits, sickness, $5 per week; death $20 to $100. President, F. Garrow, 18 Jackson St.; Corresponding Secretary, W. Abernethy, 30 Ross St.; meets fourth Monday in month.

Name,—Brotherhood of Railway Trainmen, No. 47. Organized April 21, 1887; total membership, 370; average earnings per week, paid on mileage basis; conductors, $3.63 per 100 miles, or 10 hours per day; brakemen, $2.42 per 100 miles, or 10 hours per day; wages paid monthly; average number of days idle per member during year, uncertain; general cause of idleness, depression in business; total number (union and non-union) employed at calling in locality, 110; no difference in wages and hours between members and non-members; cash benefits; sickness, $5 to $10 per week; death, $500, $1,000, $1,500. President, A. H. Micks, 6 Forest Ave.; Corresponding Secretary, H. Sharp, 2 John St.; meets every Monday night in month.

Name,—International Typographical Union, No. 459. Organized 1903; total membership, male, 29; female, 1; average earnings per week, male, $18; female, $15; number of working hours first five days, 44; number on Saturday, 4; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, male, 49; female, 4; no difference between members and non-members; leaths benefits, $225 to $400. President, J. Sutherland, Alma St.; Corresponding Secretary, R. Porter, 8 Drake St.; meets second Monday in month.

Sarnia.

Name,—Journeymen Barbers' International Union, No. 467. Organized Dec. 9, 1902; total membership, 24; average earnings per week, $15; average earnings per hour, about 24c.; number of working hours first five days, 50; number on Satur-

day, 13; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 27; difference in wages and hours between members and non-members, non-union work 10 hours per week longer than union men and receive $3 per week less; cash benefits, sickness, $5 per week; death, $40 to $500. President, W. Ross, 143 Front St.; Corresponding Secretary, W. Knight, 140 Cromwell St.; meets first Tuesday in month.

Name,—Bricklayers', Masons' and Plasterers' International Union, No. 23. Organized 1902; total membership, 23; average earnings per week, $24.75; average earnings per hour, 55c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly and fortnightly; average number of days idle per member during year, 90; general cause of idleness, weather conditions and lack of material; total number (union and non-union) employed at trade in locality, 23; body registered. President, A. Corrick, George St.; Corresponding Secretary, A. K. Bulloch, 232 Divine St.; meets first and third Mondays in month.

Name,—Order of Railway Conductors, No. 189. Organized April 27, 1886; total membership, 51; average earnings per week, $30; no regular hours, called when required; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 55 and members of B. of R. Trainmen; no difference in wages and hours between members and non-members; death benefits, amount of insurance; body incorporated and registered. President, J. J. Murphy, 434 Wellington St.; Corresponding Secretary, H. Bell, 288 Campbell St.; meets first and third Tuesdays in month.

Name,—Brotherhood of Locomotive Engineers, No. 240. Total membership, 90; average earnings per week, about $35; number of working hours first five days, mileage basis; number on Saturday, mileage basis; wages paid monthly; total number (union and non-union) employed at calling in locality, about 125; no difference in wages and hours between members and non-members; cash benefits, sickness, G. T. R. Provident Society; death, amount of insurance; superannuation, G. T. R. pension; body incorporated and registered. President, H. Steel, Mitten St.; Corresponding Secretary, J. Copeland, 140 Savoy St.

Name,—International Longshoremen's Association, No. 253. Organized August, 1910; total membership, 23; average earnings per week, $15; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 10; wages paid when job completed; average number of days idle per member during year, 120; general cause of idleness, winter weather; total number (union and non-union) employed at calling in locality, 300; difference in wages and hours between members and non-members, from 5c. to 10c. per hour; body incorporated and registered. President, J. Foster, 246 Bruce St.; Corresponding Secretary, B. Shealtis, 246 River St.; meets first and third Fridays in month.

Name,—Brotherhood of Railway Trainmen, No. 227. Organized July 5, 1886; total membership, 156; wages paid monthly; total number (union and non-union) employed at calling in locality, 190; no difference between members and non-members; body registered. President, D. Hill, Bridgeburg; Corresponding Secretary, D. McEachan, 125 Margaret St., Sarnia; meets first and third Mondays in month.

Sault Ste. Marie.

Name,—Amalgamated Society of Carpenters and Joiners, No. 869. Organized Aug. 11, 1911; total membership, 123; average earnings per week, $21; average earnings per hour, 35c.; number of working hours first five days, 50;

number on Saturday, 10; wages paid fortnightly; average number of days idle per member during year, one to two months; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, about 200; no difference in wages and hours between members and non-members; cash benefits, sickness, $2.25 to $3 per week; death, $60; superannuation, $2 per week; out of work benefits, $1.75 to $2.50 per week. President, J. W. Jeffrey, Sault Ste. Marie; Corresponding Secretary, J. L. Nattress, Steelton West; meets first and third Monday in month.

Name,—Order of Railway Conductors, No. 429. Organized May 3, 1903; total membership, 19; average earnings per week, $31.85; average earnings per hour, 35c.; number of working hours first five days, 65; number on Saturday, 13; wages paid monthly; total number (union and non-union) employed at calling in locality, 19; no difference in wages and hours between members and non-members; cash benefits, death, $600; body incorporated and registered. President, A. B. Garretson, Cedar Rapids, Iowa; Corresponding Secretary, J. Hawkshaw, c-o. A. C. Railway; meets third Sunday in month.

Name,—Brotherhood of Locomotive Engineers, No. 67. Organized 1902; total membership, 21; average earnings per week, $25; average earnings per hour, 37c.; number of working hours first five days, 60; number on Saturday, 12; wages paid monthly; total number (union and non-union) employed at calling in locality, 21; death benefits, $500; loss of limb, $250; accident, $1 per day; body incorporated and registered. President, J. W. Cleminson, John St., Steelton; Corresponding Secretary, A. C. Wagner, 347 Queen St., Sault Ste. Marie; meets first and third Wednesdays in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 606. Organized 1882; total membership, 62; average earnings per week, mileage basis; average earnings per hour, mileage basis; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 72; no difference in wages and hours between members and non-members; death benefit, amount of policy; body incorporated and registered. President, J. Robb, 129 Salisbury Ave.; Corresponding Secretary, T. J. H. Rolph, 191 Church St.; meets first Monday and third Sunday in month.

Name,—International Association of Machinists, No. 485. Organized July, 1912; total membership, 60; average earnings per hour, 30c. to 37½c.; number of working hours first five days, 51; number on Saturday, 9; Sunday, 8 or more; wages paid monthly; general cause of idleness, various; total number (union and non-union) employed at trade in locality, 70; death benefits, $50 to $200. President, J. Kennedy, Sault Ste. Marie; Corresponding Secretary, Geo. Carron, Edinburgh St., Steelton; meets first and third Thursdays in month.

Name,—International Moulders' Union, No. 391. Organized Oct. 5, 1906; total membership, 21; average earnings per week, $20 to $21; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; total number (union and non-union) employed at trade in locality, 40; no difference between members and non-members; cash benefits, sickness, $5.40 per week; death, $100 to $200; out of work benefits, dues remitted. President, J. Durrance, Highland Park; Corresponding Secretary, E. C. Wood, 44 Chestnut St.; meets third Friday in month.

Name,—International Brotherhood of Paper Makers, No. 133. Organized August 12, 1912; total membership, 60; average earnings per week, $16.85; average

earnings per hour, 34 4-5c.; number of working hours first five days, 40; number on Saturday, 8; wages paid monthly; no idle days; all are members of organization; cash benefits, death, burial expenses; body registered. President, Richard Creamer, Hotel Sup Club; Corresponding Secretary, Vernett Page, Hotel Sup Club; meets second and fourth Sundays in month.

Name,—United Association of Plumbers, Gas Fitters, Steam Fitters and Helpers, No. 414. Organized June 25, 1910; total membership, 21; average earnings per week, $22.50; average earnings per hour, 45c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; total number (union and non-union) employed at trade in locality, 25; difference in wages and hours between members and non-members, non-members receive 35c. per hour; cash benefits, sickness, $5 per week; death, $100; body incorporated. President, J. McLeod, 18 Dennis St.; Corresponding Secretary, J. S. Dew, 131 Trelawn Ave.; meets second and fourth Thursdays in month.

Name,—International Union of Wood, Wire and Metal Lathers, No. 191. Organized Aug. 7, 1911; total membership, 9; average earnings per week, $24; average earnings per hour, 40c.; number of working hours first five days, 50; number on Saturday, 10; wages paid fortnightly; average number of days idle per member during year, 60; general cause of idleness, weather conditions; no difference in wages and hours between members and non-members. President, J. Bullock, 49 Borron Ave.; Corresponding Secretary, J. W. Bullock, 49 Borron Ave., Pim Hill; meets first Friday in month.

SCHREIBER.

Name,—Brotherhood Locomotive Firemen and Enginemen, No. 387. Organized September, 1886; total membership, 100; average earnings per week, mileage basis; average earnings per hour, mileage basis; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; general cause of idleness, depression in traffic; total number (union and non-union) employed at calling in locality, 110; no difference in wages and hours between members and non-members; cash benefits, death or disability, $500 to $3,000; body incorporated and registered. President, W. Hughes, Box 33, Schreiber; Corresponding Secretary, E. E. Cambridge, Box 173, Schreiber; meets first Sunday and third Wednesday in month.

Name,—International Machinists' Helpers, No. 927. Organized Oct. 22, 1912; total membership, 24; average earnings per week, $13.30; average earnings per hour, 19c.; number of working hours first five days 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 28; no difference in wages or hours between members and non-members; cash benefits, death, $40. President, G. Bailey, Box 45, Schreiber; Corresponding Secretary, F. H. Baker, Box 45, Schreiber; meets first and fourth Tuesdays in month.

Name,—Brotherhood of Railway Trainmen, No. 419. Organized June, 1891; total membership, 125; average earnings per week, $25; average earnings per hour, 25c.; number of working hours first five days, varies; number on Saturday, varies; wages paid monthly; average number of days idle per member during year, varies; general cause of idleness, lack of trains; total number (union and non-union) employed at calling in locality, 160; no difference between members and non-members; cash benefits, superannuation, $25 per month; body incorporated and registered. President, J. F. Roos, Schreiber; Corresponding Secretary, R. B. Bell, Schreiber; meets second and fourth Mondays in month.

Silver Centre.

Name,—Western Federation of Miners, No. 148. Organized Sept. 25, 1910; total membership, 70; average earnings per week, $18; average earnings per hour, 35c.; number of working hours first five days, 45; number on Saturday, 9 hours day shift, 6 hours night shift; wages paid monthly; average number of days idle per member during year, 100; general cause of idleness, breakage of machinery, sickness, etc.; total number (union and non-union) employed at calling in locality, 90; no difference in wages or hours between members and non-members; cash benefits, sickness, $7 per week; death, $50; reading room and gymnasium for members. President, F. Taffey, Silver Centre; Corresponding Secretary, J. E. Redmond, Silver Centre: meets every Sunday in month.

Smith's Falls.

Name,—Bricklayers', Masons' and Plasterers' International Union, No. 21. Organized October, 1902; total membership, 31; average earnings per week, $24.30; average earnings per hour, 45c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; average number of days idle per member during year, 100; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 31; all are members of organization; death benefits, $100 to $300. President, H. Kendall, Elm St.; Corresponding Secretary, A. Johnston, Box 231; meets second and fourth Wednesdays in month.

Name,—Brotherhood of Locomotive Engineers, No. 381. Organized March 17, 1863; total membership, 75; average earnings per week, $40; average earnings per hour, 40c.; number of working hours first five days, varies; number on Saturday, varies; wages paid monthly; total number (union and non-union) employed at calling in locality, 100; no difference in wages and hours between members and non-members; cash benefits, superannuation, C.P.R. pension plan; body incorporated and registered. President, A. G. Boyd, Winnifred St.; Corresponding Secretary, G. T. McGloughlin, Box 312, Smith's Falls; meets first and third Tuesdays in month.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 136. Organized November, 1899; total membership, 92; average earnings per week, $11.50; average earnings per hour, 19c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 126; no difference in wages and hours between members and non-members; body incorporated and registered. President, J. Laing, Mountain; Corresponding Secretary, H. Hewitt, Mountain; meets last Saturday in March, June, September and December.

Name,—International Moulders' Union, No. 201. Total membership, 123; average earnings per week, $18; average earnings per hour, 30c.; number of working hours first five days, 50; number on Saturday, 10; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 145; difference in wages between members and non-members, non-members receive from 25c. to 27½c. per hour; cash benefits, sickness, $5 per week; death, $100 to $200; out of work benefits, 40c. per week. President, J. Driscoll, Smith's Falls; Corresponding Secretary, G. Crate, Box 263, Smith's Falls; meets first and third Tuesdays in month.

Name,—Brotherhood of Railway Trainmen, No. 245. Total membership, 132; wages paid monthly; general cause of idleness, decrease in traffic; total number (union and non-union) employed at calling in locality, 220; no difference in wages or hours between members and non-members; cash benefits, death, insurance. President, A. G. Anderson, Church St.; Corresponding Secretary, D. I. Hallinan, Railway Ave.; meets first and third Tuesdays in month.

Name,—Brotherhood of Railway Trainmen, No. 527. Organized March 27, 1893; total membership, 74; average earnings per week, $22; average earnings per hour, 24c.; number of working hours first five days, varies; number on Saturday, varies; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 147; no difference in wages or hours between members and non-members. President, C. Neil, Smith's Falls; Corresponding Secretary, J. W. Goldsmith, Box 237, Smith's Falls; meets first Monday and third Wednesday at 2.30 p.m. in month.

STRATFORD.

Name,—Journeymen Barbers' International Union, No. 136. Organized 1901; total membership, 19; average earnings per week, $13; number of working hours first five days, 55; number on Saturday, 14; wages paid weekly; cash benefits, sickness, $5 per week. President, W. Nelson, Albert St.; Corresponding Secretary, G. J. Spriggs, 273 Ontario St.; meets last Monday in month.

Name.—Brotherhood of Boiler Makers and Iron Ship Builders and Helpers, No. 3. Organized Feb. 16, 1912; total membership, 34; average earnings per week, $13.75; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 5; wages paid monthly; no idle days; total number (union and non-union) employed at trade in locality, 100; no difference between members and non-members. President, F. Williams, 124 Perth St.; Corresponding Secretary, W. J. Pepper, 120 Nelson St.; meets first and third Fridays in month.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 24. Organized 1902; total membership, 38; average earnings per week, $24; average earnings per hour, 45c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly and fortnightly; average number of days idle per member during year, 150; general cause of idleness, lack of material and weather conditions; total number (union and non-union) employed at trade in locality, 60; difference in wages and hours between members and non-members, non-members work 10 hours at about 25c. per hour; death benefits, $50 to $300; body incorporated. President, G. W. Fink, Nelson St.; Corresponding Secretary, W. L. Lewis, 107 Milton St.; meets second and fourth Thursdays in month.

Name,—Cigarmakers' International Union, No. 424. Organized 1899; total membership, male, 17; female, 1; average earnings per week, male, $15; female, $15; average earnings per hour, male, 27c.; female, 27c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; total number (union and non-union) employed at trade in locality, male, 17; female, 1; cash benefits, sickness, $5 per week; death, $50 to $550; out of work benefits, $3 per week. President, M. E. Whalen, 179 Church St.; Corresponding Secretary, J. Hagarty, 179 St. David St.; meets first Wednesday in month.

Name,—Order of Railway Conductors, No. 15. Organized Jan. 27, 1881; total membership, 30; wages paid monthly; total number (union and non-union) employed at calling in locality, 50; no difference in wages and hours between

members and non-members. President, D. S. McHaffie, 231 Ontario St.; Corresponding Secretary, R. T. Buchanan, 37 Milton St.; meets second and fourth Sundays in month.

Name,—Brotherhood of Locomotive Engineers, No. 188. Organized 1875; total membership, 67; average earnings per week, $30; number of working hours first five days, mileage basis; number on Saturday, mileage basis; wages paid monthly; total number (union and non-union) employed at calling in locality, 77; no difference in wages and hours between members and non-members; cash benefits, sickness, $5 to $20 per week in case of accident; death, $1,500 to $4,500; body incorporated. President, W. A. Brown, 141 Douro St.; Corresponding Secretary, J. Battley, 185 Douro St.; meets first and third Sundays in month.

Name,—Amalgamated Society of Engineers, No. 579. Organized 1851: total membership, 30; average earnings per week, $15.50; average earnings per hour, 27c.; number of working hours first five days, 50; number on Saturday, 5; wages paid monthly; total number (union and non-union) employed at trade in locality, 100; cash benefits, sickness, $2.50 per week; death, $60, superannuation, $2 to $2.50 per week; out of work benefits, $2.50 per week. President, H. Dickie, Guelph St.; Corresponding Secretary, W. Kidnew, 108 Mowat St.; meets every second Saturday in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No 38. Organized 1873; total membership, 70; wages paid monthly; general cause of idleness, depression in trade; total number (union and non-union) employed at calling in locality, 110; no difference in wages and hours between members and non-members; death benefits, amount of insurance; are pensioned by Railroad Company after the age of 65; body incorporated and registered. President, C. A. Reinhart, 295 Queen St.; Corresponding Secretary, J. F. Spencer, 24 Ballantine Ave.; meets second and fourth Sundays in month.

Name,—International Association of Machinists, No. 103. Total membership, 76; average earnings per week, $30; average earnings per hour, 28c.; number of working hours first five days, 45; number on Saturday, 5; wages paid monthly; no idle days; total number (union and non-union) employed at trade in locality, 150; difference in wages and hours between members and non-members, 10c. to 5c. per hour; cash benefits, sickness, $1 per week; death, according to length of membership; night school during winter months. President, E. Nesbitt, 42 Mowat St.; Corresponding Secretary, F. Polley, 195 Waterloo St.; meets second and fourth Mondays in month.

Name,—International Typographical Union, No. 139. Total membership, 16; average earnings per week, $15; average earnings per hour, 27c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 23; cash benefits, death, $75 to $100; superannuation, $5 per week. President, G. Wreford, Stratford; Corresponding Secretary, C. McDonald, 17 Nile St.; meets first Saturday in month.

Sudbury.

Name,—Bartenders' International League, No. 237. Organized Oct. 11, 1905; total membership, 48; average earnings per week, $15; average earnings per hour, 25c.; number of working hours first five days, 50; number on Saturday, 13; wages paid monthly; no idle days; total number (union and non-union) em-

ployed at calling in locality, 35; difference in wages and hours between members and non-members, $3 per week; cash benefits, sickness, $5 per week; death, $75; body incorporated and registered. President, A. Gatieu, Sudbury; Corresponding Secretary, A. H. Ranges, Box 286, Sudbury; meets every second Monday in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 9. Organized July, 1911; total membership, 14; average earnings per week, $18; average earnings per hour, 30c.; number of working hours first five days, 50; number on Saturday, 8; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 100; difference in wages or hours between members and non-members, members work 2 hours less on Saturday; cash benefits, sickness, $2.75 per week; death, $60; superannuation, $2 per week; out of work benefits, $2.50 per week; body registered. President, W. Harper, Sudbury P.O.; Corresponding Secretary, W. Clarke, Box 643, Sudbury; meets alternate Fridays in month.

THOROLD.

Name,—United Brotherhood of Carpenters and Joiners, No. 1,677. Organized 1901; total membership, 23; average earnings per week, $20.65; average earnings per hour, 45c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 60; general cause of idleness, winter weather; total number (union and non-union) employed at trade in locality, 35; difference in wages between members and non-members, 15c. per hour; cash benefits, sickness, $7 per week; death, $400; body incorporated and registered. President, W. McMillin, Thorold; Corresponding Secretary, H. Manley, Pine St., Thorold; meets every third Thursday in month.

TORONTO.

Name,—International Bakers and Confectionery Workers, No. 181. Organized July 19, 1912; total membership, 51; average earnings per week, $18; wages paid weekly; cash benefits, sickness, $7 per week; death, after 15 year's membership, $350. President, A. Ladovsky, 262 Markham St.; Corresponding Secretary, M. Lifshitz, 267 Dundas St.; meets every Friday.

Name,—Journeymen Barbers' International Union, No. 517. Organized, 1909; total membership, 200; average earnings per week, $13; average earnings per hour, 20c.; number of working hours first five days, 47; number on Saturday, 13; wages paid weekly; average number of days idle per member during year, 30; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, male, 800; female, 1; difference in wages and hours between members and non-members, non-members receive $1 per week less and work 5 hours per week more; cash benefits, sickness, $5 per week; death, $74 to $500. President, W. Howard, 1452 Queen Street West.; Corresponding Secretary, J. Tennyson, 177 George Street; meets fourth Thursday in month.

Name,—International Alliance of Billposters and Billers, No. 40. Organized, 1905; total membership, 30; average earnings per week, $14 to $16; number of working hours first five days, 47½; number on Saturday, 5; wages paid weekly; no idle days; total number (union and non-union) employed at calling in locality, 36; difference in wages and hours between members and non-members, in some cases non-members receive from $12 to $14; cash benefits, special grants in

cases of sickness and death; body incorporated and registered. President, W. Recres, Majestic Theatre; Corresponding Secretary, W. Gimblette, 15 Temperance St.; meets second Sunday in month.

Name,—International Brotherhood of Boiler Makers and Iron Ship Builders and Helpers, No. 548. Organized September, 1910; total membership, 70; average earnings per week, $16; average earnings per hour, 32c.; number of working hours first five days, 45 and 50; number on Saturday, 5; wages paid fortnightly and monthly; no idle days; total number (union and non-union) employed at trade in locality, 100; no difference in wages and hours between members and non-members; cash benefits, death, $250; out of work benefits, dues remitted; body incorporated and registered. President, J. Smith, 162 Annette St.; Corresponding Secretary, Wm. Hewitt, 169 Mulock Ave.; meets first and third Fridays in month.

Name,—International Brotherhood of Bookbinders, No. 28. Organized May, 1892; total membership, 150; average earnings per week, male, $17.50; female, $6; average earnings per hour, 36½c.; number of working hours first five days, 43¾; number on Saturday, 4¼; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, male, 250; female, 400; death benefits, $75. President, David Niell, 560 Concord Ave.; Corresponding Secretary, Wm. Sullivan, 54 Massey St.; meets second Monday in month.

Name,—Canadian National Bookbinders' Union, No. 1. Organized Dec. 15, 1911; total membership, 275; average earnings per week, $18; average earnings per hour, 37½c.; number of working hours first five days, 43¾; number on Saturday, 4¼; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 350; no difference between members and non-members. President, Frank Martin, Salem Ave.; Corresponding Secretary, Geo. F. Collins, 39 North Markham St.; meets first and third Mondays in month.

Name,—Boot and Shoe Workers' International Union, No. 233. Total membership, male, 300; female, 15; average earnings per week, male, $15; female, $10; average earnings per hour, male, 30c.; female, 23c.; number of working hours first five days, 45 to 50; number on Saturday, 4 to 5; wages paid weekly; average number of days idle per member during year, 30; general cause of idleness, stock taking and insufficient work; total number (union and non-union) employed at trade in locality, male, 380; female, 160; difference in wages and hours between members and non-members, 15 per cent. more for union men, no difference with female; hours the same; cash benefits, sickness, $5 per week; death, $50 to $100; out of work benefits, dues remitted. President, A. Headley, 101 Essex Ave.; Corresponding Secretary, W. Brown, 22 Wascana Ave.; meets every Monday in month.

Name,—International Brewery Workers' Union, No. 304. Organized June, 1902; total membership, 400; average earnings per week, $13; average earnings per hour, 26c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; total number (union and non-union) employed at trade in locality, 400; all are members of organization. President, Edward Harris, 191 River St.; Corresponding Secretary, J. D. Corcoran, Labour Temple; meets second and fourth Fridays in month.

Name,—Brewery Workers' International Union, No. 317. Organized, 1902; total membership, 68; average earnings per week, $13.50; average earnings per hour, 22½c.; number of working hours first five days, 50; number on Saturday, 10; wages paid weekly; total number (union and non-union) employed at calling

in locality, 68; no difference in wages and hours between members and non-members. President, J. Dowling, 7 Leslie St.; Corresponding Secretary, A. Cheeseman, 62 Greenwood Ave.; meets second and fourth Thursdays in month.

Name,—Bricklayers' International Union, No. 2. Organized, 1881; total membership, 1,500; average earnings per week, $24.20; average earnings per hour, 55c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 50; general cause of idleness, shortage of material and bad weather; total number (union and non-union) employed at trade in locality, 1,625; death benefits, $100 to $450; club rooms for members in winter. President, H. H. Hillier, 503 Sackville St.; Corresponding Secretary, J. Bamber, Labour Temple, Church St.; meets every Tuesday in month.

Name,—Bricklayers', Masons' and Plasterers' International Union, No. 26, Organized June, 1904; total membership, 275; average earnings per week, $23; average earnings per hour, 52½c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 90; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 325; difference in wages and hours between members and non-members, 2 hours per day and 5c. to 10c. per hour; cash benefits, death, $50 to $300. President, A. H. Webb, 34 Primrose Ave.; Corresponding Secretary, C. Robb, 901 Shaw St.; meets first and third Thursdays in month.

Name,—Broom and Whisk Makers' International Union, No. 55. Organized Feb. 28, 1912; total membership, 28; average earnings per week, $12; average earnings per hour, 22c.; number of working hours first five days, 42½; number on Saturday, 4½; wages paid weekly; general cause of idleness, lack of material; total number (union and non-union) employed at trade in locality, 45; no difference in wages and hours between members and non-members. President, W. Kirkstead, Deer Park P.O.; Corresponding Secretary, C. Christopher, 230 Heath St.; meets second Monday in month.

Name,—Brotherhood of Railway Carmen, No. 258. Organized April, 1903; total membership, 249; average earnings per week, $10 to $15; average earnings per hour, 19c. to 28c.; number of working hours first five days, 45; number on Saturday, 5; wages paid monthly; total number (union and non-union) employed at calling in locality, 350 to 500; no difference in wages and hours between members and non-members; cash benefits, sickness, donation given if needed; body incorporated and registered. President, J. McEwan, 94 Prescott Ave.; Corresponding Secretary, A. L. Stone, 32 Mulock Ave.; meets third Wednesday in month.

Name,—Brotherhood of Railway Carmen, No. 511. Organized January, 1907; total membership, 80; average earnings per week, $12 to $14; average earnings per hour, 18c. to 21c.; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; total number (union and non-union) employed at calling in locality, 120; no difference between members and non-members; cash benefits, members subscribe. President, W. H. Winters, 7 Grove Ave.; Corresponding Secretary, T. Ellicott, 255 Bellwoods Ave.; meets third Monday in month.

Name,—Amalgamated Society of Carpenters and Joiners (First Branch) No. 798. Organized, 1860; total membership, 250; average earnings per week, $15; average earnings per hour, 40c.; number of working hours first five days, 40;

number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 30; general cause of idleness, weather conditions: total number (union and non-union) employed at trade in locality, 4,000: difference in wages and hours between members and non-members, non-members receive anything from 25c. to 35c. and 40c. per hour; cash benefits, sickness, $3 per week; death, $75; superannuation, $1.75 to $2 per week; out of work benegts, $1.75 to $2.00 per week; special work for members, library, social and economic studies, etc.; body registered. President, A. Fenney, 95 Carlaw Ave.; Corresponding Secretary, E. R. Bales, Labour Temple, 167 Church St.; meets alternate Mondays in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 902 (Second Branch). Organized June 4, 1906; total membership, 120; average earnings per week, $17.60; average earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 8; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 3,000; difference in wages and hours between members and non-members, hours vary from 8 to 10 per day; wages vary from 30c. to 40c. per hour; cash benefits, sickness, $2.25 to $3 per week; death, $25 to $60; superannuation, $1.75 and $2 per week; out of work benefits, $1.75 to $2.50 per week; socials and lectures for members; body incorporated and registered. President, H. Gallop, 101 Millicent St.; Corresponding Secretary, C. Fraser, 24 Grove Ave.; meets alternate Mondays from Jan. 13, 1913.

Name,—Amalgamated Society of Carpenters and Joiners (Branch 3), No. 903. Organized, 1860; total membership, 120; average earnings per week, $17.60; average earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 25; general cause of idleness, weather conditions: total number (union and non-union) employed at trade in locality, 4,200; difference in wages and hours between members and non-members; non-members receive from 25c. to 40c. per hour and work from 9 to 10 hours per day; cash benefits, sickness, $2 per week; death, $60; death of wife, $25; superannuation, $2 to $2.50 per week; out of work benefits, $1.75 to $2.50 per week; body incorporated and registered. President, G. Sellers, 6 Manchester Ave.; Corresponding Secretary, G. Thomson, 223 Lippincott St.; meets second and fourth Wednesdays in month.

Name,—Amalgamated Society of Carpenters and Joiners, No. 801 (Fourth Branch). Organized June, 1860; total membership, 192; earnings per week, $17.60; earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly and fortnightly; general cause of idleness, weather conditions; cash benefits, sickness, $3 per week; death, $60; superannuation, $1.75 to $2 per week; out of work benefits, $2.50 per week. President, J. W. Doggett, 279 Ashdale Ave.; Corresponding Secretary, A. J. Udall, 26 Howe Ave.; meets alternate Mondays from Jan. 13.

Name,—Amalgamated Society of Carpenters and Joiners, No. 867 (Fifth Branch). Organized, 1860; total membership, 40; average earnings per week, $17.60; average earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 50; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 2,500; cash benefits, sickness, $3 per week; death, $60; superannuation, $2 per

week; body incorporated. President, H. Tooke, 39 Balmuto St.; Corresponding Secretary, W. Burrow, 28 Ivy Ave.; meets every other Tuesday from Jan. 14, 1913.

Name,—Amalgamated Society of Carpenters and Joiners, No. 906 (Sixth Branch). Organized, 1860; total membership, 137; average earnings per week, $15.50; average earnings per hour, 37c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly and fortnightly; average number of days idle per member during year, 30; general cause of idleness, climatic conditions; difference in wages and hours between members and non-members, members receive 40c. and 45c. per hour; non-members 33c. and 35c., and work 54 hours per week; cash benefits, sickness, $3 per week; death, $60; superannuation, $2 per week; out of work benefits, $1.75 and $2.50 per week; accident benefit, partial disability, $1.25; total disability, $2.50 per week; tool benefit, up to $75; social evenings during winter; body incorporated and registered. President, G. Nicholls, 1206 Gerrard St. E.; Corresponding Secretary, Thos. Gazey, 114 Chester Avenue; meets first and third Tuesdays in month.

Name,—Amalgamated Society of Carpenters and Joiners (Seventh Branch). Organized July 2, 1912; total membership, 18; average earnings per week, $17; average earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 28; general cause of idleness, weather conditions; difference in wages and hours between members and non-members, non-members work 9 to 10 hours per day and receive 35c. to 33c. per hour; cash benefits, sickness, $3 per week; death, $60; superannuation, $3 per week; out of work benefits, $2.50; body incorporated and registered. President, F. Grant, 12 Gormley Ave.; meets second and fourth Mondays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 1,553. Organized November, 1911; total membership, 35; average earnings per week, $15.25; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 39; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 250; difference in wages between members and non-members, about 15 per cent.; cash benefits, sickness, separate fund, which is optional; death, $50 to $200; death of wife, $25 to $50; disability, $100 to $400; body incorporated. President, M. Walker, 16 Eglinton Ave., Toronto; Corresponding Secretary, Harry Rackham, 420 Merton St., Toronto; meets first and third Fridays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 1,820. Organized May 2, 1911; total membership, 165; average earnings per week, $16.25; average earnings per hour, 32½c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly and fortnightly; total number (union and non-union) employed at trade in locality, 400; difference in wages and hours between members and non-members, non-members work 10 hours per day and receive from 20c. to 25c. per hour; cash benefits, death, $250; disability, $400. President, G. Mallinson, 200 Spadina Ave.; Corresponding Secretary, T. Jackson, 299 Berkeley St.; meets first and third Wednesdays in month.

Name,—Cigarmakers' International Union, No. 27. Organized, 1864: total membership, male, 425; female, 40; average earnings per week, male, $15; female, $15; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality male, 425; female, 40; all are members of organization; cash

benefits, sickness, $5 per week; death, $50 to $550; out of work benefits, $3 per week; body incorporated and registered. President, J. McCarthy, 118 Manning Ave.; Corresponding Secretary, J. Pamphilon, Room 106, 88 Church St.; meets third Monday in month.

Name,—Order of Railway Conductors, No. 345. Organized, 1890; total membership, 60; average earnings per month, $125; wages paid monthly; all are members of organization; cash benefits, sickness, permanent relief fund; death, amount of insurance; body registered. President, A. B. Garretson, Cedar Rapids, Iowa; meets second and fourth Sundays in month.

Name,—Order of Railway Conductors, No. 531. Organized July, 1907; total membership, 21; average earnings per week, $15; wages paid monthly; general cause of idleness, construction work stops in winter; total number (union and non-union) employed at calling in locality, 75; all are members of organization; death benefits, $1,000 to $3,000; body incorporated. President, A. B. Garretson, Cedar Rapids, Iowa; Corresponding Secretary, D. J. Rogers, 39 Jameson Ave.; meets first and third Sundays in month.

Name,—International Brotherhood of Electrical Workers, No. 114. Organized 1891; total membership, 120; average earnings per week, $18; average earnings per hour, 40c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly, fortnightly and monthly; average number of days idle per member during year, 60; general cause of idleness, slackness in trade; total number (union and non-union) employed at calling in locality, 250; difference in hours between members and non-members, 12 hours; death benefit, $100; strike pay, $5 to $7. President, J. C. Curran, 157½ Roncesvalles Ave.; Corresponding Secretary, W. Brampton, 35 Woodycrest Ave.; meets second and fourth Thursdays in month.

Name,—International Brotherhood of Electrical Workers, No. 353. Total membership, 200; average earnings per week, $13.50; average earnings per hour, 25c.; number of working hours first five days, 45 and 50; number on Saturday, 5 for the summer months; wages paid weekly and fortnightly; average number of days idle during year, 50; general cause of idleness, weather conditions; total number (union and non-union) employed at calling in locality, 600; difference between members and non-members, 15 per cent. difference in favour of members; cash benefits, sickness, $4 per week; death, $100; body registered. President, John Noble, 184 Parliament St.; Corresponding Secretary, E. Love, 330 Ontario St.; meets first and third Wednesdays in month.

Name,—Hoisting and Portable Engineers (I.U.S.E.) No. 356. Organized Jan. 15, 1896; total membership, 60; average earnings per week, $24; average earnings per hour, 40c.; number of working hours first five days, 50; number on Saturday, 5 and 10; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 150; difference in wages and hours between members and non-members, non-members receive from 25c. to 40c. per hour. President, J. Nott, 6 Ossington Crescent; Corresponding Secretary, Wm. Buker, 135 Montrose Ave.; meets first and third Wednesdays in month.

Name,—Brotherhood of Locomotive Engineers, No. 295. Organized 1860; total membership, 150; average earnings per week, $25; number of working hours first five days, irregular; number on Saturday, irregular; wages paid monthly; total number (union and non-union) employed at calling in locality, 350; no difference in wages or hours between members and non-members; cash benefits, sickness, Brotherhood insurance; death, Brotherhood insurance; superannuation,

C.P.R. pension; body incorporated and registered. President, A. W. Scruton, 44 McKenzie Crescent; Corresponding Secretary, W. B. Curruthers, 73 Laws St.; meets first Sunday and third Monday in month.

Name,—International Union of Steam Engineers, No. 152. Organized 1899; total membership, 200; average earnings per week, $15; average earnings per hour, 35c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly, cash benefits, sickness, $3 per week; death, $100; reading and recreation room in Labour Temple; body incorporated. President, J. G. Jones, 168 Montrose Ave.; Corresponding Secretary, H. H. Scott, 167 Church St.; meets second and fourth Wednesdays in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 67. Organized March, 1877; total membership, 69; wages paid monthly; total number (union and non-union) employed at calling in locality, 40; no difference in wages and hours between members and non-members; cash benefits, sickness, $3 per week; death, amount of insurance. President, G. E. Crowhurst, 90 Wolseley St.; Corresponding Secretary, J. Pratt, 218 Fern Ave.; meets first Thursday and third Sunday in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 262. Organized March 29, 1885; total membership, 342; average earnings per week, $30; number of working hours first five days, irregular; number on Saturday, irregular; wages paid monthly; average number of days idle per member during year, irregular; general cause of idleness, depression in business; total number (union and non-union) employed at calling in locality, 380; no difference in wages and hours between members and non-members; cash benefits, death, $500 to $3,000; body incorporated and registered. President, D. Taylor, 71 Law St.; Corresponding Secretary, W. H. Blevins, 74 Fairview Ave.; meets second and fourth Sundays in month.

Name,—Brotherhood of Locomotive Firemen and Enginemen, No. 596. Total membership, 20; average earnings per week, $20; average earnings per hour, 22c.; number of working hours first five days, irregular; number on Saturday, irregular; wages paid monthly; general cause of idleness, depression in trade; no difference between members and non-members; cash benefits, sickness, $3 per week; death. amount of insurance; body incorporated and registered. President, T. F. McCabe, 27 Kimberly Ave.; Corresponding Secretary, H. Schaefer, 36 Lyall Ave.; meets at call of President.

Name,—International Brotherhood of Stationary Firemen, No. 300. Organized October, 1911; total membership, 120; average earnings per week, $14; average earnings per hour, 25c.; number of working hours first five days, 45 and 50; number on Saturday, 9 to 10; some 5; wages paid weekly, fortnightly, and monthly; average number of days idle per member during year, as a general rule fairly employed; general cause of idleness, sickness; total number (union and non-union) employed at calling in locality, 600; no difference between members and non-members; meetings conducted on an educational basis. President, A. A. Woodward, 761 Markham St.; Corresponding Secretary, Hugh McCaffrey, 272 Dupont St.; meets second and fourth Thursdays in month.

Name,—Fur Workers Union, No. 14,187. Organized December 13, 1911; total membership, 50; average earnings per week, male, $15; female, $9; average earnings per hour, male, 30c.; female, 17c.; number of working hours first five days, 45; number on Saturday, 4; wages paid weekly; average number of days idle per member during year, 30 to 40 days; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, male, 400;

female, 100; no difference between members and non-members; body incorporated. President, S. Rash, 64 Oxford St.; Corresponding Secretary, J. Weisbrod, 63 Centre Ave.; meets every Wednesday night in month.

Name,—International Garment Workers' Union, Ladies, No. 14. Organized 1911; total membership, male, 550; female, 250; number of working hours first five days, 45; number on Saturday, 4; wages paid weekly; general cause of idleness, because it is a season trade; difference in wages and hours between members and non-members, 25 per cent. in wages and 5 hours per week; body incorporated and registered. President, A. Goldman, 28 Ulster St.; Corresponding Secretary, Yampolsky, 122 Agnes St.; meets every Monday in month.

Name,—United Garment Workers Union (Cutters and Trimmers), No. 185. Organized June, 1902; total membership, 136; average earnings per week, $19; average earnings per hour, 38c.; number of working hours first five days, 45; number on Saturday, 4; wages paid weekly; average number of days idle per member during year, 14; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, 250; difference in wages and hours between members and non-members, some non-union shops work 52 hours per week at $15 per week; sick benefits, $4 per week; instruction on special cutting for members. President, H. Yardley, 241 Jarvis St.; Corresponding Secretary, F. W. Rumbell, 494 Ontario St.; meets second and fourth Fridays in month.

Name,—United Garment Workers of America, No. 202. Organized February, 1903; total membership, female, 170; average earnings per week, female, $8 to $10; number of working hours per week, 48; wages paid weekly; no idle days. President, Miss Annie Oster, 169 Dundas St.; Corresponding Secretary, Miss M. Schrix, 152 Booth Ave.; meets second Monday in month.

Name,—Gilders and Finishers Union, No. 636. Organized October, 1912; total membership, 47; average earnings per week, $13.50; average earnings per hour, 27c.; number of working hours first five days, 45 and 50; number on Saturday, 5; wages paid weekly and fortnightly; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, 300; no difference between members and non-members; no special work for members. President, F. Heaslip, 118 Ann St.; Corresponding Secretary, W. Smith, 11 Bradd St.; meets first and third Fridays in month.

Name,—American Flint Glass Workers' Union, No. 45. Organized Dec. 1, 1912; total membership, 29; number of working hours first five days, 45; number on Saturday, 4½; wages paid weekly; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 29 union; difference in hours between members and non-members, union work 9 hours per day; non-union 9½ hours per day; death benefit, $200. President, W. Kelly, 232 First Ave.; Corresponding Secretary, F. A. Stoffel, 5 West Ave.; meets first Saturday in month.

Name,—International Glass Blowers' Association, No. 66. Total membership, 90; average earnings per week, piece work; number of working hours first five days 42½ and 45; number on Saturday, 7½; wages paid fortnightly; average number of days idle per member during year, 90 to 120; general cause of idleness, over stocked and repairs; total number (union and non-union) employed at trade in locality, 120; difference in wages and hours between members and non-members, non-members receive from 40c. to 50c. per hour; cash benefits, death, $500. President, B. C. Johnson, 38 Beaconsfield Ave.; Corresponding Secretary, H. Munn, 164 Argyle St.; meets first Saturday in month.

Name,—International Association of Glass Workers, No. 21. Total member-

ship, 50; average earnings per week, $16; average earnings per hour, 32c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; total number (union and non-union) employed at trade in locality, 150; no difference between members and non-members; death benefits, $100; body registered. President, J. McKenna, 169 Woolfrey Ave.; Corresponding Secretary, L. Swain, 92 Jones Ave.; meets second and fourth Fridays in month.

Name,—Lithographers' International Association, No. 12. Organized 1900; total membership, 140; average earnings per week, $16 to $25; average earnings per hour, 35c. to 52c.; number of working hours first five days, 43¾; number on Saturday, 4¼; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 175; no difference in wages and hours between members and non-members; cash benefits, sickness, $5 per week; death, $100 to $500. President, F. Morrice, 420 Manning Ave.; Corresponding Secretary, J. H. Christie, 104 Palmerston Ave.; meets second and fourth Wednesdays in month.

Name,—Longshoremen's International Association, No. 646. Organized Sept. 20, 1904; total membership, 20; total number (union and non-union) employed at calling in locality, 40; President, J. Dowling, 119 Leslie St.; Corresponding Secretary, S. Stalford, 2 Curzon St.; meets third Sunday in month.

Name,—International Association of Machinists, No. 235. Organized Feb. 13, 1892; total membership, 500; average earnings per week, $15 to $21; average earnings per hour, 29c. to 40c.; number of working hours first five days, 45 to 50; number on Saturday, 5; wages paid weekly, fortnightly, and monthly; average number of days idle per member during year, uncertain; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, 1,500; difference in wages and hours between members and non-members, members work 9 hours per day, non-members 10 hours per day; cash benefits, sickness, $5 per week; death, $50 to $200; out of work benefits, dues remitted; classes for discussion of economics and mechanics. President, W. C. Hagen, 844 Queen St., E.; Corresponding Secretary, G. E. Crossman, 273 Arthur St.; meets second and fourth Wednesdays in month.

Name,—Mailers' Union (I.T.U.), No. 5. Organized Nov. 23, 1893; total membership, 51; average earnings per week, $17; number of working hours first five days, 35 night work; 40 day work; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 65; difference in wages and hours between members and non-members, about 50 per cent. less than members; death benefit, $75 to $400; superannuation, $5 per week. President, T. Morton, 120 Pearson Ave.; Corresponding Secretary, J. G. Gallagher, 50 Beaconsfield Ave.; meets second Sunday in month.

Name,—International Brotherhood of Maintenance of Ways Employees, No. 419. Total membership, 60; average earnings per week, sectionmen, $10.80; foremen, $17.10; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 60; all are members of organization. President, T. Irwin, 58 Dupont St.; Corresponding Secretary, W. H. Noyes, 86 Wright Ave.; meets third Saturday in month.

Name,—International Association of Marble Workers, No. 12. Organized March 13, 1902; total membership, 29; average earnings per week, $15; average earnings per hour, 32½c.; number of working hours first five days, 45; number on Saturday, 4½; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 56; difference in wages and hours between members and non-members, non-union work 10 hours and receive from 25c. to 27c. per hour;

death benefit, $50. President, W. T. Mullen 102 William St.; Corresponding Secretary, Chas. Fraser, 254 Broadview Ave.; meets first and third Thursdays in month.

Name,—International Association of Marble Workers, No. 99. Organized 1903; total membership, 35; average earnings per week, $24.50; average earnings per hour, 56¼c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly and fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 35; all are members of organization. President, Frank Chester, 46 Withrow Ave.; Corresponding Secretary, Frank Metcalf, 56 Kenneth Ave.; meets first and third Thursdays in month.

Name,—International Association of Marble Workers (Setters' Helpers), No. 100. Organized, International, October 6, 1901; Local, September, 1911; total membership, 25; average earnings per week, $14; average earnings per hour, 32c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly and fortnightly; total number (union and non-union) employed at trade in locality, 30; difference in wages between members and non-members, non-union 25c. per hour, a difference of 7c. President David Crozier, 157 Strachan Ave.; Corresponding Secretary, Stephen Baxter, 61a Bleecker St.; meets first and third Fridays in month.

Name,—International Moulders' Union, No. 28. Organized April 21, 1860; total membership, 475; average earnings per week, $17; average earnings per hour, 34c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly and fortnightly; average number of days idle per member during year, 12; general cause of idleness, depression in trade; total number (union and non-union) employed at calling in locality, 775; difference in wages and hours between members and non-members, non-members work 10 hours for same pay as members get for 9 hours; cash benefits, sickness, $5.40 per week; death, $130 to $230; out of work benefits, dues remitted. President, W. Mahan, 67 Markham St.; Corresponding Secretary, R. Harris, 110 Ossington Ave.; meets first and third Wednesdays in month.

Name,—Moulders' International Union (Brass), No. 207. Organized Jan. 5, 1910; total membership, 74; average earnings per week, $17.50; average earnings per hour, 32c.; number of working hours first five days, 45 to 50; number on Saturday, 4 and 5; wages paid weekly and fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 100; difference in wages and hours between members and non-members, non-members receive from $12 to $18 per week; cash benefits, sickness, $5.40 per week; death, $50 to $200; superannuation, $50 to $100; out of work benefits, dues remitted. President, A. V. Mann, 205 Victor Ave.; Corresponding Secretary, W. G. Jones, 19 Tiverton Ave.; meets first and third Fridays in month.

Name,—American Federation of Musicians, No. 149. Organized December 2, 1885; total membership, male, 635; female, 27; average earnings per week (theatre), $20; wages paid weekly; average number of days idle per member during year, 40; general cause of idleness, theatres closed; difference in wages and hours between members and non-members, hours the same, wages $4 per week less; cash benefits, sickness, $3 per week; death, $50; old age fund from which old members and others are helped; body incorporated and registered. President, J. E. Jarrott, 1245 King St. W.; Corresponding Secretary, J. Ball, Musicians' Temple, University Ave.; meets first Sunday in month.

Name,—Brotherhood of Painters, Paperhangers and Decorators, No. 3. Total membership, 180; average earnings per week, $15.40; average earnings per hour,

35c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 30; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, 2,000; difference in wages and hours between members and non-members, non-union work 9 hours per day and receive 32½c. per hour; death benefits, $50 to $300; reading room for members during winter months; body incorporated and registered. President, J. Stevenson, 47 Curzon St.; Corresponding Secretary, J. W. Williams, 2 Prospect St.; meets second and fourth Tuesdays in month.

Name,—Brotherhood of Painters, Decorators and Paperhangers of America, No. 219. Organized March, 1907; total membership, 150; average earnings per week, $15; average earnings per hour, 35c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 2,500; difference in wages between members and non-members, non-members receive from 30c. to 32½c. per hour; death benefit, $50 to $200; body incorporated and registered. President, W. Hunter, 63 Augusta Ave.; Corresponding Secretary, J. Hopper, 345 Parliament St.; meets first and third Wednesdays in month.

Name,—Brotherhood of Painters, Decorators, and Paperhangers of America (Sign Writers), No. 737. Total membership, 60; average earnings per week, $15; average earnings per hour, 35c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; total number (union and non-union) employed at trade in locality, 2,600; cash benefits, death, $300; superannuation, disability; day reading room for use of members. President, A. Murray, 866 Palmerston Ave.; Corresponding Secretary, C. Risley, 210 Sherbourne St.; meets second and fourth Wednesdays in month.

Name,—Patternmakers' League of North America. Total membership, 120; average earnings per week, $20; average earnings per hour, 37½c.; number of working hours first five days, 45 and 50; number on Saturday, 4½ and 5; wages paid weekly and fortnightly; total number (union and non-union) employed at trade in locality, 155; difference in wages and hours between members and non-members, non-members receive from 30c. per hour; cash benefits, sickness, $4 per week; death, $75 to $200; superannuation, $5 per week. President, J. Hellicker, 191 Bolton Ave.; Corresponding Secretary, W. Renwick, 413 Dundas St.; meets second and fourth Mondays in month.

Name,—International Photo-Engravers' Union, No. 35. Organized June, 1903; total membership, 70; average earnings per week, $20; average earnings per hour, 43c.; number of working hours first five days, 42½; number on Saturday, 4; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 140; no difference between members and non-members; cash benefits, $7 per week; death, $100. President, E. Slean, 6 Grace St.; Corresponding Secretary, N. Smith, 184 Grange Ave.; meets first Monday in month.

Name,—Operative Plasterers' International Association, No. 48. Organized 1869; total membership, 340; average earnings per week, $18; average earnings per hour, 50c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 30 to 90; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 500 or more; difference in wages and hours between members and non-members, 5c. to 10c. per hour; death benefits, $300. President, J. Larkin, 21 Galt Ave.; Corresponding Secretary, W. J. Hamilton, 307 Salem Avenue; meets second and fourth Thursdays in month.

Name,—United Association Plumbers, Gas and Steam Fitters and Helpers, No. 46. Total membership, 325; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly and fortnightly; general cause of idleness, slackness in trade; difference in wages between members and non-members, 5c. per hour; cash benefits, sickness, $5 per week; death, $100; superannuation, $300 to $500; according to length of membership. President, W. Hogg, 16 Baden St.; Corresponding Secretary, R. Pratt, 1133 Dovercourt Road; meets second and fourth Fridays in month.

Name,—Webb Pressmen's Union, No. 1. Organized August, 1893; total membership, 73; average earnings per week, $20; average earnings per hour, 41c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 73; all are members of organization; body incorporated and registered. President, J. McKay, Star Office; Corresponding Secretary, W. J. Hall, 113½ Lansdowne Ave.; meets third Monday in month.

Name,—Printing Press Assistants' and Feeders' Union, No. 1 (C.F. of L.). Organized, 1890; total membership, male, 300; female, 1; average earnings per week, male, $13.35; female, $13.35; number of working hours first five days, 43¾; number on Saturday, 4¼; wages paid weekly; no idle days; death benefit, $75. President, Thos. Morton, 13 Dean St.; Corresponding Secretary, F. S. Attrell, 161 Wheeler Ave.; meets first Thursday in month.

Name,—Printing Pressmen's Union (C.F.L.), No. 10. Organized 1882; total membership, 180; average earnings per week, $20; average earnings per hour. 43c.; number of working hours first five days, 43¼; number on Saturday, 4¼; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 200; no difference between members and non-members; cash benefits, death, $100; out of work benefits, dues remitted. President, B. Hurd, 118 Wheeler Ave.; Corresponding Secretary, A. Cook, 25 Birch Ave.; meets second Monday in month.

Name,—International Union of Slate and Tile Roofers, No. 39. Organized Jan. 1, 1908; total membership, 30; average earnings per week, $19.80; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 8; wages paid weekly and fortnightly, general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 30; difference in wages and hours between members and non-members, different prices; death benefits, $100; body incorporated. President, J. Hall, 108 Claremont St.; Corresponding Secretary, E. Brooke, 209 University Ave.; meets first and third Mondays in month.

Name,—International Association of Steam Fitters, No. 78. Organized, 1888; total membership, 125; average earnings per week, $19.80; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly and fortnightly; average number of days idle per member during year, 30; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 200; difference in wages between members and non-members, non-union average from 35c. to 40c. per hour; death benefit, $300. President, E. Lawson, 110 Geoffrey St.; Corresponding Secretary, F. Black, 1,344 Queen St. W.; meets second and fourth Fridays in month.

Name,—Amalgamated Sheet Metal Workers' International Alliance, No. 30. Organized May 1, 1896; total membership, 200; average earnings per week, $16.50; average earnings per hour, 35c.; number of working hours first five days, 40

and 45, according to shops and time of year; number on Saturday, 4 and 5; wages paid weekly; average number of days idle per member during year, very few; general cause of idleness, slack season; total number (union and non-union) employed at trade in locality, 300; difference in wages and hours between members and non-members, 2 hours a day and about 10c. an hour; death benefits, $100; trade instruction for members; body incorporated and registered. President, D. McCarthy, 669 Manning Ave.; Corresponding Secretary, A. J. Murray, 40 Hastings Ave.; meets first and third Fridays in month.

Name,—International Brotherhood of Steam Shovel and Dredgemen, No. 46. Organized July 15, 1912; total membership, 100; average earnings per week, engineers, $37.50; cranemen, $27.50; firemen, $20; average earnings per hour, engineers, 60c.; cranemen, 40c.; firemen, 25c.; number of working hours first five days, 50; number on Saturday, 10; wages paid weekly and monthly; average number of days idle per member, 60; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 150; difference in wages between members and non-members, $25 per month; death benefit, $100. President, L. A. Morrison, 29 Herman Ave.; Corresponding Secretary, G. P. McEnaney, 63 Aziel St.; meets third Sunday in month.

Name,—Journeymen Stonecutters' Association of North America. Total membership, 140; average earnings per hour, 52½c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 90; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 200; cash benefits, death, $100 to $175; sick members aided by subscription and gifts from local funds. President, D. Crockett, 340 Montrose Ave.; Corresponding Secretary, D. S. Robertson, 12 Isabella St.; meets second and fourth Fridays in month.

Name,—Amalgamated Association of Street and Electric Railway Employees of America, No. 113. Organized Aug. 3, 1893; total membership, 1,710; average earnings per week, $15.25; average earnings per hour, 26c.; number of working hours first five days, 50; number on Saturday, 10; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 1,800; no difference in wages and hours between members and non-members; cash benefits, sickness, $3 per week; free doctor; death, $800; superannuation, $800; body incorporated and registered. President, J. Scott, 136 Wright Ave.; Corresponding Secretary, J. Gibbons, Room 4, Labour Temple, Toronto; meets first Monday and third Sunday in month.

Name,—Journeymen Tailors' Union of America, No. 132. Organized, 1883: total membership, male, 241; female, 46; average earnings per week, male, $14: female, $9; average earnings per hour, male, 29c.; female, 19½c.; number of working hours first five days, 45; number on Saturday, 4; wages paid weekly: average number of days idle per member during year, 30; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, male, 600; female, 400; difference between members and non-members, non-members draw less; cash benefits, sickness, $5 per week; death, $100; special work for members, lectures on social and economic subjects; body registered. President, C. S. Bonter, 121 Dundas St.; Corresponding Secretary, J. Watt, Labour Temple, 167 Church St.; meets second and fourth Mondays in month.

Name,—Journeymen Tailors' Union of America, No. 156. Total member-

ship, male, 20; female, 15; average earnings per week, male, $13; female, $9; average earnings per hour, male, 21c.; female, 15c; number of working hours first five days, 50; number on Saturday, 10; wages paid fortnightly; average number of days idle per member during year, 100; general cause of idleness, slackness in trade; total number (union and non-union) employed at trade in locality, male, 20; female, 15; cash benefits, sickness, $5 per week; death, $100; body incorporated and registered. President, F. Curtis, c-o Agnew, Merchant Tailor; Corresponding Secretary, W. W. Greenwood, 213 Symington Ave.; meets first Monday in month.

Name,—International Union of Tilesetters and Helpers, No. 37. Total membership, 90; average earnings per week, $19; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 4; wages paid fortnightly; body incorporated. President, A. Myles, 45 Yarmouth Road; Corresponding Secretary, R. Brawley, 133 Montrose Ave.; meets first and third Fridays in month.

Name,—International Brotherhood of Teamsters (Coal Drivers) No. 457. Organized October, 1904; total membership, 60; average earnings per week, $12 to $13; average earnings per hour, 20c. to 22c.; number of working hours first five days, 50; number on Saturday, 10, except 4 summer months; wages paid weekly; no idle days; total number (union and non-union) employed at calling in locality, about 350; difference in wages and hours between members and non-members, from $1 to $3 per week; strike benefits, $5 per week. President, W. Osborn, 811 Bathurst St.; Corresponding Secretary, H. R. Barton, 171 Montrose Ave.; meets first and third Sundays in month.

Name,—Commercial Telegraphers' Union of America, No. 1. Organized May 1, 1909; total membership, 800; average earnings per month, male, $35 to $100; female, $30 to $80; number of working hours first five days, 45; number on Saturday, 9; wages paid monthly; no difference between members and non-members. President, M. Mackay, 79 Hutchison St., Montreal, Que.; Corresponding Secretary, C. E. Hill, 362 Brock Ave.; Toronto.

Name,—International Alliance of Theatrical Stage Employes, No. 58. Organized, 1898; total membership, 80; average earnings per week, $12; average earnings per hour, 35c.; wages paid weekly; average number of days idle per member during year, 75; general cause of idleness, theatres closed; total number (union and non-union) employed at calling in locality, 90; no difference between members and non-members. President, E. A. Ferris, 347 Huron St.; Corresponding Secretary, J. E. Ferris, 347 Huron St.; meets second Sunday in month.

Name,—International Alliance Theatrical Stage Employes, No. 173. Organized Oct. 17, 1909; total membership, 60; average earnings per week, $20; average earnings per hour, 50c.; number of working hours first five days, 35; number on Saturday, 8; no idle days; wages paid weekly; total number (union and non-union) employed at calling in locality, 75; difference in wages between members and non-members, non-union receive $12 per week: body incorporated and registered. President, C. A. McMahon, 260 Queen St. W.; Corresponding Secretary, G. F. Eaton, 37 Robert St.; meets first Sunday in month.

Name,—Tobacco Workers' International Union, No. 63. Organized, 1902; total membership, male, 7; female, 1; average earnings per week, male, 10; female, $10; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; total number (union and non-union) employed at trade in locality, male, 7; female, 1; cash benefits, sickness, $3 per week; death, $50.

President, H. Thorn, Scollard St.; Corresponding Secretary, Frank Helliwell, 171 Marlborough Ave.

Name,—Brotherhood of Railway Trainmen, No. 255. Organized March 30, 1888; total membership, 435; average earnings per week, $20 to $35; average earnings per hour, 24c. to 39c.; number of working hours first five days, varies; number on Saturday, varies; wages paid monthly; average number of days idle per member during year, varies; general cause of idleness, depression in trade; total number (union and non-union) employed at calling in locality, 575; no difference in wages and hours between members and non-members; cash benefits, death or disability, $500, $1,000, $1,500. President, T. L. H. McGuire, 115 Fermanagh Ave.; Corresponding Secretary, J. E. Miller, 224 Fairview Ave.; meets first and third Sundays; every Monday except first and third.

Name,—Brotherhood of Railway Trainmen, No. 322. Organized Jan. 23, 1889; total membership, 205; average earnings per week, $20; average earnings per hour, 25c. to 35c.; number of working hours first five days, uncertain; number on Saturday, uncertain; wages paid monthly; average number of days idle per member during year, uncertain; general cause of idleness, lack of freight; total number (union and non-union) employed at calling in locality, about 300; no difference in wages and hours between members and non-members; death benefits, $175 to $1,500; body incorporated and registered. President, J. Bryan, 200 Galley Ave.; Corresponding Secretary, H. T. Meredith, 282 Crawford St.; meets first and third Sundays in month.

Name,—Brotherhood of Railway Trainmen, No. 759. Organized June 7, 1908; total membership, 95; average earnings per week, about $18; wages paid monthly; total number (union and non-union) employed at calling in locality, 97; no difference between members and non-members; death benefit, amount of insurance; body incorporated and registered. President, Wm. Burke, 17 Roblock Ave.; Corresponding Secretary, F. King, 606 Delaware Ave.; meets first and third Sundays in month.

Name,—International Union of Travellers' Goods and Leather Novelty Workers, No. 5. Organized February, 1902; total membership, male, 50; female, 0; average earnings per week, male, $12.50; female, $6.50; average earnings per hour, male, 25c.; female, 12c.; number of working hours first five days, male, 47½; female, 45; number on Saturday, male, 5; female, 4½; wages paid fortnightly; average number of days idle per member during year, 6; general cause of idleness, stock taking; total number (union and non-union) employed at trade in locality, male, 150; female, 75; cash benefits, death, $100; social evenings in winter months for members. President, W. G. Duncan, 195 Osler Ave.; Corresponding Secretary, R. J. Hodge, 235 Royce Ave.; meets second Wednesday in month.

Name,—International Typographical Union, No. 91. Organized Sept. 13, 1844; total membership, male, 1,180; female, 2; average earnings per week, male, $18; female, $18; average earnings per hour, male, 38c.; female, 38c.; number of working hours first five days, 44; number on Saturday, 4; wages paid weekly; total number (union and non-union) employed at trade in locality, male, 1,180; female, 2; cash benefits, sickness, $4 per week; death, $50; superannuation, $5 per week; body incorporated and registered. President, A. E. Thompson, 624 Ontario St.; Corresponding Secretary, S. Hadden, 77 Victoria St. (Room 21); meets first Saturday in month.

Name,—Upholsterers' International Union, No. 30. Organized, 1894;

total membership, 75; average earnings per week, $16.50; average earnings per hour, 33c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; average number of days idle per member during year, 12; general cause of idleness, slackness of trade; total number (union and non-union) employed at trade in locality, 120; difference in wages between members and non-members, 5c. to 10c. per hour; cash benefits, sickness, $4 per week. President, G. Saunders, 286 Euclid Ave.; Corresponding Secretary, F. Prior, 370 Margueretta St.; meets first and third Tuesdays in month.

Name,—Waiters' Union, No. 300. Organized March, 1911; total membership, 160; average earnings per week, $6.50; number of working hours first five days, 70; number on Saturday, 10; wages paid fortnightly and monthly; total number (union and non-union) male, 400; female, 100; no difference between members and non-members; death benefits, $50; reading room, rest room and pool room for use of members; body registered. President, J. W. Noakes, 1,432 Bloor St.; Corresponding Secretary, S. Tinker, Room W., Yonge St. Arcade; meets first and last Wednesdays in month.

Waterloo.

Name,—Journeymen Association of Stonecutters of North America. Organized April 15, 1910; total membership, 27; average earnings per week, $21.60; average earnings per hour, 45c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; average number of days idle per member during year, 100; general cause of idleness, slackness of trade; total number (union and non-union) employed at trade in locality, 28; difference in wages and hours between members and non-members, union receive 45c. for 8 hour day; non-union, 30c. for 10 hour day; death benefit, $100. Corresponding Secretary, Chas. Hinton, 45 Eby St.

Welland.

Name,—Bricklayers' and Masons' International Union, No. 32. Organized, 1902; total membership, 44; average earnings per week, $26.77; average earnings per hour, 52½c.; number of working hours first five days, 45; number on Saturday, 5; wages paid weekly; total number (union and non-union) employed at trade in locality, 44; all are members of organization; reading room provided for members; body incorporated. President, G. Scott, Welland; Corresponding Secretary, A. G. Pettitt, Box 448 Welland; meets every Wednesday in month.

Name,—Amalgamated Society of Carpenters and Joiners. No. 809. Organized, 1907; total membership, 22; average earnings per week, $18.90; average earnings per hour, 35c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; average number of days idle per member during year, 94; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 210; difference in wages and hours between members and non-members, non-members receive 30c. per hour; cash benefits, sickness, $3 per week; death, $60; superannuation, $2 per week; out of work benefits, $2.50 per week; body incorporated and registered. President, G. Urquhart, Garner Ave.; Corresponding Secretary, F. Edwards, Box 23, Welland; meets second and fourth Mondays in month.

Name,—United Brotherhood of Carpenters and Joiners, No. 969. Organized, 1902; total membership, 45; average earnings per week, $19 average earnings

per hour, 35c.; number of working hours first five days, 45; number on Saturday, 9; wages paid weekly; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 85; difference in wages and hours between members and non-members, about 5c. per hour in some cases; death benefits, $200; body incorporated and registered. President, R. E. Mann, Merritt St.; Corresponding Secretary, B. Jackson, Box 897, Welland; meets second and fourth Fridays in month.

Name,—United Garment Workers, No. 274. Organized Jan. 23, 1911; total membership, male, 1; female, 26; average earnings per week, male, 18; female, $8; number of working hours first five days, 43; number on Saturday, 5; wages paid weekly; total number (union and non-union) employed at trade in locality, male, 1; female, 26; recreation room with piano for use of members; body incorporated and registered. President, Alice Noble, 173 Welland St.; Corresponding Secretary, Christine Macarthur, 23 Merritt St.; meets first Tuesday in month.

Name,—International Association of Machinists, No. 131. Total membership, 32; average earnings per week, $18; average earnings per hour, 30c.; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly; general cause of idleness, lack of power; total number (union and non-union) employed at trade in locality, 75; cash benefits, death, $50 to $200; out of work benefits, dues remitted. President, J. Hedrick, Welland St.; Corresponding Secretary, W. S. Noble, 108 Regent St.; meets first and third Mondays in month.

Name,—International Moulders' Union, No. 472. Organized Nov. 1, 1907; total membership, 50 to 60; average earnings per week, $18 to $20; average earnings per hour, 30c. to 32½c.; number of working hours first five days, 50; number on Saturday, 5 in summer, 8 in winter; wages paid weekly; cash benefits, sickness, $5.40 per week; death, $100 to $200. President, David Kirk, Post Office, Welland; Corresponding Secretary, E. Jones, 57 Randolph St.; meets first and third Fridays in month.

Name,—Order of Railway Telegraphers, No. 16. Organized December, 1894; total membership, male, 548; female, 2; average earnings per week, male, $18; female, $18; average earnings per hour, male, 20c.; female, 20c.; number of working hours first five days, 60; number on Saturday, 12; wages paid monthly; no idle days; total number (union and non-union) employed at calling in locality, 10; no difference in wages or hours between members and non-members; cash benefits, death, amount of insurance. President, J. C. Culkins, Albion, Mich.; Corresponding Secretary, J. H. Staley, Box 203, Welland; meets first Monday in month.

Windsor.

Name,—Journeymen Barbers' International Union, No. 451. Organized Oct. 16, 1902; total membership, 30; average earnings per week, $12; average earnings per hour, 16c.; number of working hours first five days, 61¼; number on Saturday, 15½; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, about 40; difference in wages and hours between members and non-members, members receive $1.20 and up more per week; cash benefits, sickness, $5 per week; death, $75 to $500. President, W. Holmes, Sandwich St. E.; Corresponding Secretary, A. Wickens, 18 Ouellette Ave.; meets fourth Wednesdays in month.

Name,—Bricklayers', Masons', and Plasterers' International Union, No. 6. Total membership, 80; average earnings per week, $27.50; average earnings per hour, 62½c.; number of working hours first five days, 40; number on Saturday, 4; wages paid weekly; average number of days idle per member during year, 90; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 80; cash benefits, death, $300. President, G. Hewitt, 144 Bruce Ave.; Corresponding Secretary, R. G. Thompson, 72 Cameron Ave.; meets every Tuesday in month.

Name,—Order of Railway Conductors, No. 494. Organized, 1900; total membership, 40; average earnings per week, $20; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; total number (union and non-union) employed at calling in locality, 50; no difference between members and non-members; death benefit, amount of insurance. President, D. Stuart, King George Hotel; Corresponding Secretary, G. Jackson, 114 Goyeau St.; meets second and fourth Sundays in month.

Name,—United Garment Workers of America, No. 190. Total membership, male, 9; female, 264; average earnings per week, male, $20; female, $12; average earnings per hour, male, 40c.; female, 25c.; number of working hours first five days, 43 2-3; number on Saturday, 4¼; wages paid weekly; body incorporated and registered. President, Mrs. Emma Overs, 126 Assumption St.; Corresponding Secretary, Miss Nellie Lefebvre, 246 Windsor Ave.; meets every second Wednesday in month.

Name,—Federated Association of Letter Carriers, No. 16. Organized Jan. 18, 1910; total membership, 10; average earnings per week, $13.50; average earnings per hour, 28c.; number of working hours first five days, 40; number on Saturday, 8; wages paid fortnightly; no idle days; total number (union and non-union) employed at calling in locality, 13; no difference between members and non-members. President, C. Stricker, Crawford Ave.; Corresponding Secretary, C. J. Stowe, 16 Pelissier St.; no set time of meeting.

Name,—International Brotherhood of Locomotive Engineers, No. 390. Total membership, 22; average earnings per week, $25; average earnings per hour, 39c.; wages paid monthly; total number (union and non-union) employed at calling in locality, 22; all are members of organization; no difference between members and non-members. President, James McGarval, 73 Assumption St.; Corresponding Secretary, G. W. Richardson, 59 Aylmer St.; meets second and fourth Thursdays in month.

Name,—National Association of Marine Engineers, No. 11. Organized June, 1903; total membership, 11; average earnings per month, $95; number of working hours first five days, 60; number on Saturday, 12; Sunday, 12; wages paid monthly; average number of days idle per member during year, 90; general cause of idleness, winter months; total number (union and non-union) employed at calling in locality, 35; no difference in wages and hours between members and non-members. President, A. McDonald, 28 Crawford Ave.; Corresponding Secretary, N. Maitland, 221 London St. W.

Name,—American Federation of Musicians, No. 566. Organized Sept. 13, 1911; total membership, male, 50; female, 1; average earnings per week, male,

$17; female, $17; wages paid weekly; total number (union and non-union) employed at calling in locality, 4. President, P. J. Tschishart, 35 Pitt St. E.; Corresponding Secretary, H. C. Philp, 88 Goyeau St.; meets second Wednesday in month.

Name,—Operative Plasterers' International Association, No. 345. Organized Nov. 13, 1905; total membership, 15; average earnings per week, $27.74; average earnings per hour, 56c.; number of working hours first five days, 45; number on Saturday, 4; wages paid fortnightly; no idle days; total number (union and non-union) employed at trade in locality, 31; difference in wages and hours between members and non-members, non-union work 10 hours per day for $5.04; cash benefits, death, $100 to $200; body incorporated and registered. President, J. Oliver Adams, 21 Marentette Ave.; Corresponding Secretary, F. Kloske, 62 Windsor Ave.; meets first and third Tuesdays in month.

Name,—United Association of Plumbers and Steam Fitters, No. 552. Organized, 1910; total membership, 30; average earnings per week, $22.50; average earnings per hour, 47½c; number of working hours first five days, 40; number on Saturday, 4 for 5 months; average number of days idle per member during year, 60; general cause of idleness, lack of material; total number (union and non-union) employed at trade in locality, 125; difference in wages between members and non-members, 10 per cent.; cash benefits, sickness, $5 per week; death, $100; body incorporated and registered. President, J. Fletcher, 205 Goyeau St.; Corresponding Secretary, T. Mathewson, 192 London St.; meets first and third Fridays in month.

Name,—Switchmen's Union of North America, No. 184. Organized Jan., 1904; total membership, 18; average earnings per week, $24.79; average earnings per hour, 37c.; number of working hours first five days, 55; number on Saturday, 11 or 12; wages paid monthly; average number of days idle per member during year, 30; general cause of idleness, recreation; total number (union and non-union) employed at calling in locality, 75; no difference between members and non-members; death benefits, $750 to $1,500; body incorporated and registered. President, Thomas Barrons, 38 Curry Ave.; Corresponding Secretary, J. W. Alldritt, 203 London St.; meets first and third Thursdays in month.

Name,—Brotherhood of Railway Trainmen, No. 316. Organized, 1893; total membership, 140; average earnings per week, $28; average earnings per hour, 40c.; number of working hours first five days, 60; wages paid monthly; total number (union and non-union) employed at calling in locality, 140; no difference in wages or hours between members and non-members; body incorporated and registered. President, J. W. Marshall, 14 Lincoln Ave., Walkerville; Corresponding Secretary, C. Weldrick, 168 Dougall Ave.; meets first and third Wednesdays, second and fourth Sundays in month.

Name,—International Typographical Union, No. 553. Organized Sept. 30, 1907; total membership, 20; average earnings per week, $15; number of working hours first five days, 43½; number on Saturday, 4½; wages paid weekly; no idle days; total number (union and non-union) employed at trade in locality, 26; difference in wages and hours between members and non-members, about the same. President, W. R. Black, 190 Janette Ave.; Corresponding Secretary, G. E. Marentette, 98 Albert St.; meets first Sunday in month.

WOODSTOCK.

Name,—Bricklayers', Masons' and Plasterers' International Union, No. 22. Organized, 1903; total membership, 23; average earnings per week, $24.30; average earnings per hour, 45c.; number of working hours first five days, 45; number on Saturday, 9; wages paid fortnightly; average number of days idle per member during year, 150; general cause of idleness, weather conditions; total number (union and non-union) employed at trade in locality, 23; no difference in wages and hours between members and non-members: death benefits, $300. President, S. May, Chaple St.; Corresponding Secretary, F. J. Haines, 25 Huron St.; meets second and fourth Wednesdays in month.

SUGGESTIONS FROM LABOUR ORGANIZATIONS

International Brotherhood of Maintenance of Ways Employes, No. 262, Beaverton. The members of our organization suggest that the men employed on railways should be paid fortnightly, and that the hours of labour should be reduced on Saturday, the same as in other countries.

International Association of Machinists, No. 535, Chapleau. We want fortnightly payments.

Brotherhood of Railway Trainmen, No. 246, Chapleau. Payments should be fortnightly.

Amalgamated Society of Engineers, No. 746, Collingwood. We think it would be a great help to labour organizations if all mechanics entering Canada were registered as union or non-union men.

International Association of Machinists, No. 309, Fort William. We submit that all payments should be made fortnightly; also substitute the word "union" instead of "Standard" in contracts where it states that the standard rate of wages shall be paid.

Federated Association of Letter Carriers, No. 18, Guelph. We would suggest that we receive pay every day we are ill, owing to the fact that we are exposed to the weather at all seasons; also that we receive a straight pension at termination of service instead of present method. This is a Dominion matter. Secretary, Labour Bureau.

Brotherhood of Painters, Decorators and Paperhangers, No. 205, Hamilton. We would like to see an Act passed enforcing the minimum scale and Government arbitrators to settle trade disputes.

Patternmakers League of North America, Hamilton. We would appreciate the advent of a law making eight hours a day the maximum hours of labour.

Brotherhood of Railway Trainmen, No. 226, Hamilton. We may say that legislation *re* the hours of labour is badly needed and much debate could be gone into on that subject. The number of men to be employed on switch engines, freight and passenger trains is not "Standard" in Canada. If men in this calling were to be paid at least twice a month it would prove to be a great advantage to them and would explode the farce of the big money that is paid to railroad men.

International Union of Bricklayers and Masons, No. 5, London. Old age pensions and building inspectors to see that buildings are properly constructed.

International Brotherhood of Electrical Workers, No. 120, London. We are strongly in favour of a rigid line inspection to be carried on all over the

Province in view of the great danger to men's lives and the large number of lines now being strung across the Province.

Canadian Association of Stationary Engineers, No. 30, London. For 26 years we have been asking for certificates. A limited certificate was granted in 1908. Every year we appear before the Minister of Agriculture asking for graded certificates. These would work no harm to any engineer and be of great benefit to many. The Association is not a union and sets no scale of wages.

International Brotherhood of Maintenance of Ways Employees, No. 195, London. Men in our department are not allowed time for going to work or returning home, although the company orders men away on certain trains, no matter if it be 4 a.m., and they do not get to the job until the next day, they are not allowed any time for it. This we consider an injustice, as we think when a man leaves home and goes to a station his time should start from at least the leaving time of the train. Employes of any other concern in Canada are paid for every minute they are away by orders of the company. It is enough for a man to be at the discomfort of being away from home a week at a time without losing about a day a week, which he would not lose had he been working for any one but a railway company.

Order of Railway Telegraphers, No. 1, London. The hours for service for railway telegraphers in Canada are too long. A telegrapher handling trains orders or connected in any way with movements of trains should not work more than 9 hours per day and 6 days a week.

Journeymen Stonecutters Association of North America, Niagara Falls. By raising the duty on cut stone coming from the United States into Canada to the same rate as cut stone going from Canada to the United States would help to improve the condition of our trade; also help to develop one of the resources of the Province of Ontario.

Canadian Association of Stationary Engineers, No. 25, Owen Sound. We think as a body that the *law* should be that no man should be allowed to go on duty after going off duty until he has been off such duty 8 hours, and same should be posted in factory regulations.

Canadian Association of Stationary Engineers, No. 29, Port Arthur. We are of opinion that the Act referring to stationary engineers is not much good to us up in this district, because if a man violates the Act he is not fined as per Act, but allowed to write for his certificate and that ends it. We think if a man violates the Act he ought not to be allowed that privilege, but ought to be fined and compelled to wait at least one year before he gets his certificate.

Brotherhood of Locomotive Firemen and Enginemen, No. 387, Schreiber. The black list system on railroads should be abolished, as it deprives a man from following his profession and floods the market with unemployed men who would otherwise be working.

Bricklayers', Masons' and Plasterers' International Union, No. 24, Stratford. It would be in the best interests of the trade and of the general public if practical men were appointed building inspectors by the municipalities, etc. At present, in some places the chief of the fire department is building inspector. There may be places where the chief is a practical man, but there certainly are places where he is not. In such cases inspection is a farce.

Brotherhood of Railway Carmen of America, No. 258, Toronto. Better sanitary conditions, the 8-hour day, fortnightly pay, and shelter for men whilst

at work and proper places to eat their lunch at noon; also accommodation for drying and washing after work.

Amalgamated Society of Carpenters and Joiners, No. 903, Toronto. We believe it would benefit all parties if the 8-hour day was made compulsory on non-union men and those employing them as well as for organized men.

International Union of Steam Engineers, No. 356, Toronto. We would suggest as a benefit to our organization an Engineers' License Law for the Province of Ontario, to cover all hoisting engineers. There was such a Bill before the House last session, but for some reason was withdrawn. Now, in our opinion, a License Law is almost a necessity at the present time for the protection of the engineers and contractors as well as for life and property, for as it is now any one can apply for a job whether he is an engineer or not.

International Brotherhood of Stationary Engineers, No. 300, Toronto. We desire better sanitary conditions.

Lithographers' International Association, No. 12, Toronto. We think that all members of trades immigrating to Canada from the Old Country should by some means be notified by the Government of the very high rents and cost of living that prevail here, as sometimes the wages seem to be the drawing attraction for them, and they find after they arrive here they are not any better off, at least that is the complaint of such that have come under our jurisdiction.

United Association of Journeymen Plumbers, Gas Fitters, Steam Fitters, No. 46, Toronto. We are strongly of the opinion that it would be in the interest of the trade, and also advantageous to the public if a Provincial Law were passed and enforced governing the installation of plumbing work throughout the entire Province. We also think the law in reference to sewage being emptied into lakes and streams should be more rigidly enforced. There should also be a Provincial examination for all plumbers working at the trade, certificates of proficiency being issued to those who pass the examination successfully, in order that those desirous of employing plumbers may have some guaranty of the capability of the operator.

Street Railway Employes' Union, No. 113, Toronto. We want the side steps on open cars abolished. They are dangerous to both passengers and employees.

Brotherhood of Railway Trainmen, No. 322, Toronto. Compensation for injuries, old age pensions under Government control. A Workmen's Compensation Act will be laid before the Legislature in the coming session. Secretary, Labour Bureau.

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Allandale:					
Order of Railway Conductors, No. 355	W. D. Scott	Essa Street, Allandale.	J. P. McMillin	96 Cumberland Street, Allandale	1st Sunday in month.
Brotherhood of Locomotive Engineers, No. 486	T. C. Royce	Box 212, Allandale	J. Logue	Box 24, Allandale	1st Sunday and 3rd Monday in month.
Brotherhood of Locomotive Firemen and Engineers, No. 442	E. C. Cheesman	Bradford St., Barrie	F. C. Harris	124 Tiffin St., Allandale	2nd and 4th Sundays in month.
Brotherhood of Railway Trainmen, No. 377	C. McNiven	Bradford St., Barrie	W. H. Fell	Burton Ave., Allandale.	2nd Sunday in month.
Amherstburg:					
International Longshoremen's Association, No. 377	Robert Kett	Amherstburg	Albert Brown	Amherstburg	2nd and 4th Thursdays in month.
International Rock Drillers' Association, No. 20	Robert Kett	Amherstburg	L. A. Parker	Amherstburg	1st Monday in month.
Int. Bro. Steam Shovel and Dredgemen, No. 20	S. White	Amherstburg	J. Ryan	Box 196, Amherstburg.	Meets at call of President.
Beaverton:					
Int. Brotherhood Maintenance of Ways Employees, No. 262	J. Thompson	Pefferlaw	F. Quinton	Udney	Meets twice a year, January and July.
Belleville:					
Bricklayers', Masons' and Plasterers' Int. Union, No. 30	W. Johnson	Belleville P.O.	A. Ellis	Belleville P.O.	1st and 3rd Monday in month.
Brotherhood Locomotive Firemen and Enginemen, No. 66	W. Fairbairn	Belleville Station	R. Milne	Belleville Station	2nd and 4th Tuesday in month.
Brotherhood of Locomotive Engineers, No. 189	W. Rogers	Belleville Station	H. Lavois	Box 34, Belleville Station	1st and 3rd Sunday in month.
Brotherhood of Railway Trainmen, No. 108	W. Gates	35 Wayland Avenue, Toronto	W. Moise	328 Foster Avenue, Belleville	2nd and 4th Wednesday in month.
Berlin:					
Journeymen Barbers' International Union, No. 304	Otto Boll	26 Queen Street West	H. Hoffman	53 King Street	3rd Monday in month.
Boot & Shoe Workers' Union, No. 206	L. Albrecht	102 King Street	H. Oberer	130 Louisa Street	2nd and 4th Friday in month.

Bricklayers', Masons' and Plasterers' International Union, No. 12	J. Tooker	Ahrens Street	A. Johnson	11 Whitney Place	1st and 3rd Friday in month.
United Bro. Carpenters and Joiners, No. 553	David Mather	Berlin	H. Schneider	87 Samuel Street	1st and 3rd Friday in month.
Cigarmakers' International Union, No. 422	P. Steinke	cor. Louisa and St. Leger Streets	S. Welheiser	22 Troy Street	2nd Tuesday in month.
International Brotherhood of Electrical Workers (Linemen), No. 535	W. Mitchell	247 Mill Street	P. Krutter	50 Elgin Street	1st and 3rd Wednesdays in month.
Canadian Association of Stationary Engineers, No. 9	J. Luft	Spring Street	Carl Emmrich	186 Victoria Street	
Hodcarriers' and Building Laborers' Union, No. 160	W. Bendick	79 King Street West	G. Hofman	58 Homewood Avenue	1st and 3rd Wednesday in month.
Federated Association of Letter Carriers, No. 20	C. Hamacker	96 Peter Street	Ira Underwood	102 Peter Street	1st Friday in month.
United Plumbers and Steamfitters, No. 527	G. Zimmerman	Waterloo	E. Reitz	57 William St., Berlin.	1st and 3rd Monday in month.
Journeymen Tailors' Union, No. 264	G. Filsinger	79 Ahrens Street West	Miss C. Shoemaker	70 Weber Street	1st Tuesday in month.
Upholsterers' International Union, No. 42	J. Wotherspoon	8 Dill Street	H. Behrend	55 Francis Street	2nd and 4th Thursday in month.
Blenheim:					
International Brotherhood of Maintenance of Ways Employees, No. 502	A. Mansel	Blenheim	S. Tilley	48 Park Ave. West, Chatham	Meets at call of President.
Brantford:					
Journeymen Barbers' International Union, No. 298	J. Rice	5 George Street	T. Linscott	248 Colborne Street	Last Monday in month.
Bartenders' International League, No. 182	H. O'Connell	106 Market Street	J. Knight	Kerby House	Last Sunday in month.
Bricklayers', Masons' and Plasterers' International Union, No. 9	T. Parsons	249 West Street	A. Fischer	Grand View P.O.	Alternate Thursdays in month.
United Brotherhood Carpenters and Joiners, No. 498	A. Brown	Grand View P.O.	C. Packham	308 Sheriden Street	2nd and 4th Tuesday in month.
Canadian Association Stationary Engineers, No. 4	A. Ames	159 Chatham Street	J. Ogle	73 Richmond Street	2nd and 4th Friday in month.
International Association of Machinists, No. 607	V. Grotan	228 Dalhousie Street	J. Hanhe		2nd and 4th Wednesday in month.
American Federation of Musicians, No. 467	J. McHutchison	9 Grey Street	E. Duval	103 Wellington Street.	1st Sunday in month.
Operative Plasterers' International Association, No. 164.	H. Ramsbottom	56 Brighton Road	H. Perrin	7 Holmes Street	Alternate Thursdays in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Brantford.—*Continued.*					
Journeymen Stonecutters' Association of N. America....	R. Liston	General Delivery	W. Fairley	33 Albany Street	2nd and 4th Thursdays in month.
International Typographical Union, No. 378	G. Moore	Jarvis Street	Ira Scruton	24 Wells Avenue	4th Wednesday in month.
Bridgeburg:					
Brotherhood of Railway Carmen, No. 542	.....	. . . .	A. Merryweather.	Bridgeburg	. . . .
United Brotherhood of Carpenters and Joiners, No. 1,850	J. Malcolm	Amagari	A. Shirk	Bridgeburg	1st and 3rd Monday in month.
Brotherhood of Locomotive Engineers, No. 679	R. Walsh	411 Dearborn Street, Buffalo, N.Y.	M. Harvey	Bridegburg	1st Wednesday and 3rd Tuesday in month.
Brotherhood of Railway Trainmen, No. 713	F. Finlayson ...	Bridgeburg	G. Smith	Central Avenue	1st and 3rd Tuesday in month.
Brockville:					
Journeymen Barbers' International Union, No. 387.....	W. Amond	112 King Street West.	F. Clutterbuck ..	7 King Street West....	Last Monday in month.
Cigarmakers' International Union, No. 411	H. Belmont	Brockville	J. Grantham ...	Brockville	
Order of Railway Conductors, No. 366	R. Dickson	Brockville	G. Graham	121 Pearl Street	1st and 2nd Monday in month.
Brotherhood Locomotive Firemen and Enginemen, No. 69	C. Buell	Brockville	F. Race	72 Pearl Street East...	Every Thursday in month.
Brotherhood of Locomotive Engineers, No. 118	E. Mortimer	28 Charles Street	R. Wardrop	39 Daniel Street	Every Tuesday in month.
International Moulders' Union, No. 329	J. Monahan	24 Jessie Street	C. Gauthier	1 Park Street	2nd and 4th Tuesday in month.
Journeymen Tailors' Union of America, No. 262	E. Enright	Church Street	A. Hamilton	24 John Street	1st Monday in month.
Brotherhood of Railway Trainmen, No. 208	H. Walter	55 Pearl Street West..	W. Barkley	43 Pearl Street West..	1st and 3rd Sunday in month.
Carleton Place:					
Brotherhood of Railway Carmen, No. 229	T. Carson	Carleton Place	R. New	Box 341, Carleton Place	4th Thursday in month.
International Brotherhood of Blacksmiths and Helpers, No. 424	S. Hale	Carleton Place	R. Curtis	Box 244, Carleton Place	4th Saturday in month.

International Association of Machinists, No. 211	J. Crawford	Carleton Place	J. McFadden	Box 326, Carleton Place	2nd and 4th Thursday in month.
International Moulders' Union, No. 362	G. Murray	Carleton Place	J. Carson	Box 292, Carleton Place	3rd Thursday in month.
Metal Polishers, Buffers, Platers and Brass Workers' International Union, No. 96	M. Saunders	Box 301, Carleton Place	A. Williamson	Box 168, Carleton Place	1st and 3rd Thursday in month.
Stove Mounters' International Union, No. 78	C. Morphy	Charles Street	P. Thompson	Charles Street	2nd and 4th Thursday in month.
Chapleau:					
Brotherhood of Railway Carmen, No. 378	W. Westerman	Chapleau	A. Bennett	Chapleau	23rd of each month.
Order of Railway Conductors, No. 315	A. Garetson	Cedar Rapids, Iowa, U.S.A.	. . .	. . .	Every Tuesday in month.
Brotherhood of Locomotive Engineers, No. 319	P. Downey	Chapleau	B. Warner	Box 158, Chapleau	Every Monday at 2 p.m.
Brotherhood of Locomotive Firemen and Enginemen, No. 321	W. Card	Chapleau	S. Kruger	Box 116, Chapleau	Every Wednesday in month.
International Association of Machinists, No. 535	J. Carmichael	Box 8, Chapleau	V. Beardmore	Box 57, Chapleau	2nd and 4th Wednesday in month.
Brotherhood of Railway Trainmen, No. 246	E. Mitchell	Chapleau	D. Matheson	Chapleau	Thursdays in month.
Chatham:					
American Federation of Musicians, No. 629	E. Braddon	123 William Street	F. Phelps	41 Grey Street	At call of President.
International Typographical Union, No. 421	G. Morrell	St. Clair Street	A. Riddell	Box 382, Chatham	1st Monday in month.
Cobalt:					
Order of Railway Telegraphers, No. 99	. . .	. . .	T. Baker	Diver	2nd Sunday in month.
Western Federation of Miners, No. 146	T. Duncan	Box 446, Cobalt	J. Gorman	Box 446, Cobalt	Sunday, 2 p.m.
Coatsworth:					
Order of Railway Telegraphers, No. 43	H. Perham	Star Building, St. Louis, Mo., U.S.A.	L. Quick	Star Building, St. Louis, Mo., U.S.A.	At call of Chairman.
Collingwood:					
Journeymen Barbers' International Union, No. 528	L. Fryer	Collingwood P.O.	F. Bollen	Box 536, Collingwood	1st and 3rd Monday in month.
Bricklayers' and Masons' International Union, No. 19	J. Gilham	Box 777, Collingwood	W. Court	Box 797, Collingwood	3rd Wednesday in month.
Amalgamated Society of Carpenters and Joiners	S. Brooks	Market Street	R. Fleetham	122 First Street	Mondays.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Collingwood.—*Continued.*					
Amalgamated Society of Engineers, No. 746	T. Kelly	Box 697, Collingwood	N. Robinson	Box 877, Collingwood	1st and 3rd Saturday in month.
Labourers' Protective Union, No. 14,106	R. McGinnie	Robinson Street	R. Boyce	Spruce Street	2nd and 4th Friday in month.
International Longshoremen's Association, No. 476	W. Nutt	Collingwood	F. Myrtle	Berch Street	1st and 3rd Thursday in month.
International Association of Machinists, No. 627	N. Veitch	Box 917, Collingwood	T. Robinson	Box 951, Collingwood	2nd and 4th Wednesday in month.
Cordova:					
Western Federation of Miners, No. 147	D. McCurdy, Sr.	Cordova Mines	J. Young	Cordova Mines	1st and 2nd Sunday and 2nd and last Monday in month.
Deseronto:					
Order of Railway Telegraphers, No. 43	W. Thomas	Deseronto	J. McLean	Sydenham	No set time of meeting.
Dundas:					
International Moulders' Union, No. 269	J. Falconer	Dundas	M. Dunn	Box 117, Dundas	3rd Monday in month.
Elk Lake:					
Western Federation of Miners, No. 140	W. McCauley	Box 348, Elk Lake	R. Camprie	Box 348, Elk Lake	Sunday in month.
Fort William:					
Journeymen Barbers' International Union, No. 549	A. McWilliams	118 Harold Street	R. Yorke	118 Harold Street	2nd and 4th Monday in month.
Bartenders' International League, No. 761	J. Harris	Ogden Hotel	R. Carson	215 Bethune Street	1st and 3rd Tuesday in month.
International Brotherhood of Boilermakers and Iron Ship Builders and Helpers, No. 505	I. Hunter	213 Frederica Street	F. Stafford	420 Mary Street	1st and 3rd Friday in month.
Bricklayers', Masons' and Plasterers' International Union, No. 25	W. Drew	39 Catharine Street	F. Robinson	108 Empire Ave., Port Arthur	2nd and 4th Monday in month.
International Association of Bridge and Structural Iron Workers, No. 53	D. McNeil	Box 182, Fort William	R. Young	Box 182, Fort William	1st and 3rd Friday in month.

Amalgamated Society of Carpenters and Joiners, No. 878	J. Daley	Box 411, Fort William.	G. Dutton	107 Vickers St., Fort William	1st and 3rd Monday in month.
United Brotherhood of Carpenters and Joiners, No. 1,498	J. Smith	227 Pruden Street	W. Cresdee	110 South Harold St...	1st and 3rd Tuesday in month.
Order of Railway Conductors, No. 286	A. Blennerhasseld	1201 Victoria Avenue..	A. Marcotte	439 Wiley Street	2nd and 4th Sunday in month.
Brotherhood of Locomotive Engineers, No. 243	H. Mills	231 Pruden Street.....	W. Smyth	407 Prince Arthur Blvd.	2nd and 4th Tuesday in month.
Brotherhood of Locomotive Engineers, No. 654	D. Anderson ...	1317 Donald Street....	J. Stothers	1201 Edward Street...	2nd and 4th Monday in month.
International Union of Steam and Operating Engineers, No. 298	W. Downing ...	28 Ontario Street, Port Arthur	W. Gunby	110 Harold Street, Fort William	1st and 3rd Wednesday in month.
Brotherhood of Locomotive Firemen and Enginemen, No. 225	T. Elliott	308 Finlayson Street..	P. Dargavel	624 Wiley Street	2nd and 4th Wednesday in month.
International Longshoremen's Association (Coal Handlers), No. 746	N. Domenico ...	539 McLauchlin Street	A. Jarratt	739 Simpson Street....	At call of President.
International Longshoremen's Association (Grain Trimmers), No. 479	W. Houston	223 Brodie St. South..	C. McLean	621 Prince Arthur Blvd.	1st Tuesday in month.
International Association of Machinists, No. 309	W. Jackson	305 Brodee St. North..	H. Stafford	133 Heron Street	2nd and 4th Tuesday in month.
International Brotherhood of Maintenance of Ways Employees, No. 128	E. Erickson	1313 Edward Street...	A. Rowe	Box 395, Fort William	4th Saturday in month.
International Moulders' Union, No. 429	T. Morris	115½ E. Frederica St..	W. Newman	806 Northern Avenue..	1st and 3rd Wednesday in month.
Operative Plasterers' International Association, No. 344.	C. Roler	Port Arthur	F. Phillips	John St., Fort William	2nd and 4th Friday in month.
United Association of Plumbers, Gas Fitters, etc., No. 257	J. Dexley	504 John Street North.	J. Lawrence	108 Norah Street North	Every 2nd Thursday in month.
Brotherhood of Railway Trainmen, No. 306	J. Firth	112 Pruden Street	F. Hutchins	307 Finlayson Street..	1st and 3rd Sunday in month.
International Typographical Union, No. 417	D. Ross	219 Norah Street South	G. Carter	134 Franklin Street ..	1st Saturday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Galt:					
Journeymen Barbers' International Union, No. 413	A. Wison	South Water Street	J. Soutan	Box 174, North Water Street	Last Thursday in month.
United Brotherhood of Carpenters and Joiners, No. 1,216	A. Henderson	23 Pollock Avenue	R. Cavers	Shade Street	1st and 3rd Monday in month.
Bricklayers', Masons' and Plasterers' International Union, No. 15	M. Haller	P.O., Preston	W. Johnston	Box 208, Hespeler	1st and 3rd Wednesday in month.
Federated Association of Letter Carriers, No. 39	J. Spooner	91 South Street	H. Mills	27 Lowell Street	First of month.
International Moulders' Union, No. 447	J. Cook	New Royal Hotel	D. Melvin	107 Main Street West.	1st and 3rd Thursday in month.
American Federation of Musicians, No. 124	W. Ewart	30 Rich Avenue	L. Schwartz	66 Water Street	1st Sunday in month.
Brotherhood of Painters, Decorators and Paperhangers, No. 906	W. Thomson	13 Harris Street	C. Evans	49 Cedar Street	2nd and 4th Thursday in month.
Gananoque:					
International Union of Paving Cutters	T. Underwood	Gananoque	J. Round	Box 186, Gananoque	. . .
Graham:					
Brotherhood of Railway Carmen, No. 28	B. Wilson	Sioux-Lookout P.O.	A. Vass	Box 101, Sioux-Lookout	3rd Saturday in month.
Guelph:					
Bakers and Confectioners, No. 95 (C. F. L.)	W. Brown	20 Fergus Street	C. Moore	41 Cork Street	Last Saturday in month.
Journeymen Barbers' International Union, No. 310	. . .	. . .	F. Nosehay	Albay Road	Last Monday in month.
Bartenders' International League, No. 104	W. Maloney	American Hotel	F. Smith	Priory Hotel	1st Friday in month.
Bricklayers', Masons' and Plasterers' International Union, No. 3	H. Cate	Queen Street	J. Weekes	9 Galt Street	2nd and 4th Thursday in month.
Federated Association of Letter Carriers, No. 18	H. Winters	34 Durham Street	R. Masson	56 St. Arnaud Street	At call of President.

Metal Polishers', Buffers', Platers and Brass Workers' International Union, No. 56	R. Bolton	Wellington Street	R. Mason	Huskenson Street	1st Wednesday in month.
International Moulders' Union, No. 212	J. Franks	Guelph	F. Felker	114 Northumberland St.	1st and 3rd Friday in month.
Piano and Organ Workers' Union, No. 34	J. Camidge	23 Earle Street	J. Brabson	167 Cardigan Street	3rd Thursday in month.
International Typographical Union, No. 391	W. Sim	29 George Street	C. Ritchie	365 Elora Road	2nd Monday in month.
Hamilton:					
Journeymen Barbers' International Union, No. 131	H. Paro	103 James Street	H. Halford	59 John Street South	1st and 3rd Monday in month.
Bartenders' International League, No. 197	G. Hibberd	123 James Street S.	R. Lanaway	293 Hughson Street N.	1st and 3rd Sunday in month.
International Brotherhood of Bookbinders, No. 114	H. Howard	21 Young Street	H. Icely	293 Jackson Street W.	2nd Thursday in month.
Boot & Shoe Workers' Union, No. 228	J. Gimblett	110 East Avenue	H. Harrison	43 Melbourne Street	3rd Tuesday in month.
Boot & Shoe Workers' Union (Cutters), No. 232	P. Kennedy	298 John Street N.	T. Connell	31 Steven Street	4th Friday in month.
Boot & Shoe Workers' Union (Sole Leather), No. 444	H. Spriggs	89 Peter Street	W. Hamilton	15 Hess Street South	2nd Friday in month.
Broom & Whisk Makers' International Union, No. 9	W. Rollo	13 Spring Street	W. McAdam	90 Catharine Street	2nd Monday in month.
Amalgamated Society of Carpenters and Joiners, No. 815	J. Brigg	463 Charlton Ave. West	A. Burton	46 Garfield Ave. South.	Alternate Fridays in month.
United Brotherhood of Carpenters and Joiners, No. 18	W. Smith	92 Oxford Street	A. Blythe	49 Wellington St. N.	1st and 3rd Tuesday in month.
American Brotherhood of Cement Workers, No. 170	J. McNab	29 Napier Street	W. Irving	22 Victoria Ave. South	Every 2nd Monday.
Cigarmakers' International Union, No. 55	J. Sullivan	Locke Street North	F. Hough	170 Duke Street	2nd Tuesday in month.
Order of Railway Conductors, No. 27	H. Mandar	142 Strachan Street	A. Cameron	297 York Street	1st and 3rd Sunday in month.
International Brotherhood of Electrical Workers (Linemen), No. 390	A. Younge	40 Liberty Street	A. E. Hurd	131 Forest Avenue	1st and 3rd Friday in month.
Brotherhood of Locomotive Engineers, No. 133	J. Oliver	198 Lock Street North.	A. Griffitt	193 Napier Street	2nd and 4th Sunday in month.
Canadian Association of Stationary Engineers, No. 2	C. Leckie	74 William Street	A. Heath	111 Burris Street	2nd and 4th Monday in month.
Bro. of Locomotive Firemen and Enginemen, No. 151	G. Thedorff	91 Robert Street	T. McQueen	56 Strachan Street W.	1st and 3rd Sunday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Hamilton.—*Con.*					
United Garment Workers (Pressers), No. 196	John Madigan	205 Mary Street	John Thake	326 McNab Street N.	2nd and 4th Monday in month.
United Garment Workers of America, No. 256	M. Levine	25 Binley Street	S. Landers	39 Charles Street	2nd Wednesday in month.
International Glass Workers' Association, No. 33	J. Robinson	244½ Wellington St. North	J. Nugent	203 Rebecca Street	1st and 4th Monday in month.
International Association of Granite Cutters			W. Fletcher	105 Canada Street	4th Thursday in month.
Journeymen Horseshoers' International Union, No. 72	W. Allen	Caroline Street South	J. Russell	141 Main Street West	2nd and 4th Wednesday in month.
Federal Labour Union (City Firemen), No. 11	J. Crawford	39 Sophia Street South	J. Hotrum	251 Wellington St. N.	1st Monday in month.
International Longshoremen's Association, No. 792	A. Hill	15 Murray Street West	G. Jobborn	545 Hughson St. N.	2nd and 4th Thursday in month.
International Moulders' Union, No. 26	T. Church	115 Peter Street	J. Ripley	159 Mary Street	Every Wednesday in year.
American Federation of Musicians, No. 293	H. Casel	43 Barton Street West.	J. Gimblett	110 East Ave. North	2nd Sunday in month.
Brotherhood of Painters, Decorators and Paperhangers, No. 205	C. Richardson	39 Evans Avenue	G. Purcell	76 Main Street West	1st and 3rd Monday in month.
Pattern Makers' League of North America	S. McFadden	183 Victoria Avenue N.	J. Harrower	40 St. Matthews Ave.	1st and 3rd Thursday in month.
International Union of Metal Buffers and Polishers, No. 26	C. Mannell	Wood Street West.	D. Irvine	56 Edinburgh Avenue.	1st and 3rd Wednesday in month.
International Union Printing Pressmen and Assistants, No. 176	F. Holleran	138 Cannon Street East	W. Berry	193 Market Street	4th Wednesday in month.
Amalgamated Association of Sheet Metal Workers, No. 61	G. Farr	Burlington Beach	R. Sibbald	28 Park Street South.	Alternate Fridays in month.
Stove Mounters' International Union, No. 35	W. Keegan	67 Cheaver Street	T. Bevers	25 Tisdale Street	1st Monday in month.

Amalgamated Association of Street and Electric Railway Employees, No. 107	J. McIlwaith	King Street West	E. Batt	63 Aikman Avenue	2nd and 4th Saturday in month.
International Union of Stereotypers and Electrotypers, No. 113	G. Wills	240 Hunter Street E.	F. Haas	253 York Street	1st Monday in month.
Journeymen Tailors' Union of America, No. 149	C. Smith	300 Bold Street	J. Mosgrove	103 Argue Street	3rd Monday in month.
Order of Railway Telegraphers, No. 155	W. Kelly	91 Mulberry Street	E. Armstrong	Box 98, Smithville	2nd Sunday in month.
International Alliance Theatrical Stage Employees, No. 129	W. Reid	109 Cannon Street E.	G. Fitzpatrick	52 Spring Street	4th Sunday in month.
Tobacco Workers' International Union, No. 48	A. Turner	130 Forest Avenue	A. Broughton	22 Hunt Street	2nd and 4th Monday in month.
Brotherhood of Railway Trainmen, No. 226	W. Irvine	118 Tisdale Street	A. Smith	25½ Melbourne Street.	2nd and last Sunday in month.
Havelock:					
Order of Railway Conductors, No. 578	W. Jones	Havelock	J. Garratt	Box 47, Havelock	1st and 3rd Monday in month.
Brotherhood of Locomotive Engineers, No. 658	R. Jack	Havelock	J. Toman	Havelock P.O.	2nd and 4th Monday in month.
Brotherhood of Railway Trainmen, No. 293	J. Kilsey	Havelock	W. Green	Havelock	2nd and 4th Thursday in month.
Humberstone:					
United Brotherhood of Carpenters and Joiners, No. 1168	L. White	Box 25, Humberstone	Ira Barnhardt	Box 78, Humberstone	1st and 3rd Monday in month.
Ignace:					
Brotherhood of Railway Carmen, No. 95	J. Schofield	Ignace	E. Baker	Ignace	20th of month.
Ingersoll:					
International Brotherhood of Maintenance of Ways Employees, No. 503	M. Sprague	Ingersoll	D. McCord	Belmont	At call of President.
Jack Fish:					
International Brotherhood of Maintenance of Ways Employees, No. 231	J. Leewell	Heron Bay	A. Bianconi	Jack Fish	Last Saturday in month.
Kenora:					
Brotherhood of Locomotive Engineers, No. 535	J. Preston	Kenora	J. Penney	Kenora	1st Wednesday and 3rd Sunday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Kenora.—*Continued.*					
Brotherhood of Locomotive Firemen and Enginemen, No. 305	A. Alterton	Y.M.C.A.	F. Lowe	Box 309, Kenora	1st Sunday and 3rd Wednesday in month.
International Association of Machinists, No. 28	T. McLellan	Box 151, Kenora	J. Douglas	Box 151, Kenora	3rd Monday in month.
Machinists' Helpers (A. F. L.), No. 12806			T. Turner	Box 199, Kenora	
Order of Railway Telegraphers, No. 7	D. Campbell	Hampton Apartments, Winchester St., Toronto	R. Wilton	Kenora	Monthly.
Brotherhood of Railway Trainmen, No. 270	A. McDonald	120 4th Street N.	J. J. Closkey	Box 109, Kenora	2nd and 4th Wednesday in month.
Kingston:					
Journeymen Barbers' International Union, No. 514	P. Lawless	1 Rideau Street	W. Lemmon	219 University Ave.	Last Monday in month.
Bricklayers', Masons' and Plasterers' International Union, No. 10	J. Turner	304 Brock Street	A. Fowler	323 Johnston Street	2nd and 4th Tuesday in month.
United Brotherhood of Carpenters and Joiners, No. 249	J. Watts	99 Stuart Street	W. Hubble	26 Quebec Street	2nd and 4th Monday in month.
National Association of Marine Engineers, No. 4	A. Kennedy	395 Johnston Street	J. Gillie	101 Clergy Street	Every Monday in month.
International Building Labourers' Union, No. 66	G. Wilkinson	Alfred Street	W. Baxter	154 Rideau Street	1st and 3rd Wednesday in month.
Federated Association of Letter Carriers, No. 8	R. Elliott	Kingston P.O.	B. Hanlon	88 Division Street	At call of President.
International Moulders' Union, No. 252	R. Murray	32 Patrick Street	J. Clark	Princess Street	1st and 3rd Monday in month.
International Brotherhood of Painters, Decorators and Paperhangers, No. 114	W. Veale	Victoria Street	W. Edgar	374 Alfred Street	1st and 3rd Tuesday in month.
United Association of Plumbers, Steamfitters and Gasfitters, No. 221	J. Burke	35 Main Street	T. Blomelly	67 Collingwood Street.	1st and 3rd Tuesday in month.
Journeymen Stonecutters' Association of N. America	F. Monk	21 Elm Street	W. Jackson	110 Patrick Street	2nd Tuesday in month.

Journeymen Tailors' Union of North America, No. 263....	R. Alexander ...	451 Albert Street	J. Sauve	29 Brock Street	1st and 3rd Monday in month.
Kingsville:					
International Union of Tobacco Workers, No. 71	Mrs. Blum	Kingsville	Mrs. E. Sellick..	Box 98, Kingsville ...	. . . .
Lindsay:					
Order of Railway Conductors. No. 322.	A. Garretson ...	Cedar Rapids, Iowa, U.S.	W. Hodgson	Box 581, Lindsay.	1st and 2nd Monday in month.
Brotherhood of Locomotive Engineers, No. 174.	W. Chambers ...	Box 205, Lindsay	T. Wilkinson ...	Box 205, Lindsay.	2nd and 4th Sunday in month.
Brotherhood of Railway Train men, No. 308	H. Debois	Box 528, Lindsay	D. Walker	Box 528, Lindsay.	1st and 2nd Sunday in month.
London:					
Journeymen Barbers' International Union, No. 366	J. Frezell	617 Dundas St.	J. Secker	713 Richmond St.	4th Monday in month.
Bartenders' International League, No. 137	F. Hoysom	Dominion House	H. Edsall	58 Colborne St.	2nd and 4th Sunday in month.
International Alliance of Bill posters and Billers, No. 22	W. Cooney	Queen's Ave.	C. Vincent	673 Lorne Ave.	2nd and 4th Sunday in month.
International Brotherhood of Bookbinders, No. 206.....	J. Moffatt	318 Talbot St.	C. Barnes	25 Carlton Ave.	2nd Friday in month.
Boot and Shoe Workers' Union No. 88	.....	.....	W. Gregory	347 Wortley Road.	2nd and 4th Thursday in month.
United Brewery Workers' International Union No. 381..	J. Beanch	Piccadilly St.	A. Jackson	134 Mill St.	3rd Thursday in month.
Bricklayers' and Masons' International Union, No. 6 .	E. Holiday	Clarence St.	C. Short	571 York St.	2nd and 4th Wednesday in month.
Amalgamated Society of Carpenters and Joiners, No. 881	W. Ellis	20 Alexander St.	J. Tanton	379 Waterloo St.	2nd and 4th Wednesday in month.
United Brotherhood of Carpenters and Joiners, No. 1,946	P. Phillippin ...	92 Chesley Ave.	J. Hill	768 Dundas St.	2nd and 4th Friday in month.
Cigarmakers' International Union, No. 278	A. Borland	c-o 110 Dundas St.	J. McKenzie	110 Dundas St.	1st and 3rd Tuesday in month.
Order of Railway Conductors. No. 16	T. Parker	27 Beaconsfield Ave. ...	H. Heath	250 Queen's Ave.	1st and 3rd Sunday in month.
International Brotherhood of Electrical Workers, No. 120.	E. Ingles	85 Clarence St.	W. Tierney	365 Cheapside St.	2nd and 4th Thursday in month.
Brotherhood of Locomotive Engineers, No. 68	J. Porteous	374 York St.	J. Irwin	745 Dundas St.	1st Sunday and 3rd Thursday in month.
Amalgamated Society of Engineers, No. 709	A. McDonald ...	304 Oxford St.	G. Scollick	583 Grey St.	Alternate Fridays.
Canadian Association of Stationary Engineers, No. 30 ..	J. Middleton	128 York St.	D. Campbell	114 Simcoe St.	Every Friday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
London.—*Continued.*					
Brotherhood of Locomotive Firemen and Enginmen, No. 117	J. Richardson	14 Kitchener Ave.	W. McCall	379 Hamilton Road	1st Wednesday and 3rd Sunday in month.
Brotherhood of Locomotive Firemen and Enginemen, No. 468	D. McAuley	939 Lorne Ave.	C. Phipps	830 Lorne Ave.	2nd and 4th Sunday in month.
United Garment Workers' Union, No. 33	H. Kurtzman	128 Maitland St.	H. Bedford	436 Richmond St.	2nd Wednesday in month.
International Association of Granite Cutters			W. Cunningham	145 Clarence St.	
Federal Labour Union, No. 5.	W. Cole	100 Cartwright St.	H. Pearce	Central Ave.	3rd Friday in month.
Federated Association of Letter Carriers, No. 4	F. Currie	Dundas St., E.	W. Empey	573 Oxford St.	1st Wednesday in month.
International Brotherhood of Maintenance of Ways Employes, No. 195	D. Campbell	10 Thornton Ave.	D. Walsh	281 Central Ave.	Last Saturday in month
American Federation of Musicians, No. 279	H. Woostie	310 Wharncliffe Road	C. Perrin	352 Adelaide St.	4th Sunday in month.
International Union of Metal Polishers, Buffers, Platers & Brass Workers, No. 32	D. Eldridge	16 Clarke St.	C. Bailey	85 Hamilton Road.	2nd and 4th Friday in month.
Printing Pressmen and Assistants' International Union, No. 173	C. Hollins	270 Horton St.	H. Smythe	642 Marshall St.	1st Monday in month.
International Stove Mounters' Union, No. 33	G. Robison	12 Lesley St.	W. Beck	65 Adelaide St.	
Journeymen Stonecutters' Association of North America	T. Harper	2 Sherley Ave.	H. Boyd	825 Adelaide St.	2nd and 4th Wednesday in month.
Journeymen Tailors' Union of America, No. 30	W. Mottashed	Piccadilly St.	J. Hussey	241 Colborne St.	3rd Monday in month.
Order of Railway Telegraphers, No. 1	F. Parent	Cassalman	D. Shaw	London.	At call of Chairman.
International Alliance of Theatrical Stage Employees, No. 105	W. Burrows	225 Grey St.	G. McFadden	315 Ottawa Ave.	1st and 3rd Sunday in month.

Brotherhood of Railway Trainmen, No. 240	A. Wheatley	89 Hamilton Road	W. Harris	27 Victor St.	1st and 3rd Sunday in month.
Brotherhood of Railway Trainmen, No. 415	P. Kelleher	850 Princess Ave.	W. Nichol	896 Princess Ave.	2nd and 4th Sunday in month.
International Typographical Union, No. 133	H. Wanless	45 Askin St.	W. Ruse	120 Wilson Ave.	1st Thursday in month.
Merritton:					
United Brotherhood of Carpenters and Joiners, No. 1,402	I. Fawell	Merritton	R. Thompson	Box 92, Merritton.	1st and 3rd Monday in month.
Midland:					
International Longshoremen's Association, No. 189	C. Howard	Midland	D. Hall	Midland	1st and 3rd Tuesday in month.
Milverton:					
International Brotherhood of Maintenance of Ways Employees, No. 163	R. McCord	40 Perth St., Guelph	J. Elliott	Milverton.	1st Friday in month.
Mimico:					
Brotherhood of Locomotive Firemen & Enginemen, No. 756	T. Heuston	36 Galley Ave., Toronto	A. Shaw	Box 191, Mimico	1st and 3rd Thursday in month.
Muskoka:					
International Brotherhood of Maintenance of Ways Employees, No. 217	J. McClackin	Grayhurst	R. Treadwell	Midhurst P.O.	Every three months.
Niagara Falls:					
Bricklayers', Masons' and Plasterers' International Union, No. 27	D. McKinnon	Niagara Falls South P.O.	E. Jackson	155 Kitchener St.	Every Thursday in month.
Amalgamated Society of Carpenters and Joiners, No. 889	R. Lydeard	34 Clark St.	W. Broomhall	73 Centre St.	Alternate Fridays in month.
United Brotherhood of Carpenters and Joiners, No. 713	E. McDowell	Kick's Hotel	J. Kephart	40 Main St.	Every Wednesday in month.
Federated Association of Letter Carriers, No. 36	E. Smith	72 McRae St.	R. Ross	81 McRae Street	1st Wednesday in month.
Journeymen Stonecutters' Association of North America	J. Madden	Stamford.	E. Garnell	62 Morrison St.	2nd Monday in month.
Brotherhood of Railway Trainmen, No. 379	J. Winterton	777 Ferry St.	C. Ortt	13 Ellis St.	2nd and 4th Friday in month.
North Bay:					
Bricklayers', Masons' and Plasterers' International Union, No. 29	P. Adshead	North Bay.	D. Buffatt	Box 936, North Bay.	1st and 3rd Monday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
North Bay.—*Continued.*					
Brotherhood of Railway Carmen, No. 192	L. Wilson	North Bay P.O.	R. Moffat	North Bay P.O.	1st Thursday and 4th Friday in month.
Order of Railway Conductors, No. 242	H. Graham	North Bay.	A. Brown	Box 161, North Bay	
Brotherhood of Locomotive Engineers, No. 308	W. Hallandal	North Bay	T. Turner	183 McIntyre St.	1st and 3rd Monday in month.
International Brotherhood of Maintenance of Ways Employees, No. 244	A. Partushek	Vernon.	D. Wilson	Box 58, Mattawa.	Last Saturday in month.
Brotherhood of Railway Trainmen, No. 249	R. Dingwell	North Bay	A. Caughy	North Bay	1st and 3rd Sunday in month.
Oakville:					
Amalgamated Society of Carpenters and Joiners	A. Burrell	Oakville P.O.	G. Wilson	Oakville P.O.	Tuesday.
Orangeville:					
International Brotherhood of Maintenance of Ways Employees, No. 214	W. Neil	Orangeville	R. McIntosh	345 14th St. E., Owen Sound	Last Saturday in March, June, Sept. and December.
Orillia:					
Bricklayers', Masons' and Plasterers' International Union, No. 18	R. Graham	Cedar Street	B. Glenister	Box 232, Cedar Island, Orillia	Alternate Tuesdays in month.
Oshawa:					
Bricklayers', Masons' and Plasterers' International Union, No. 20	H. Carter	Oshawa P.O.	C. Nicolls	Box 319, Oshawa	1st and 3rd Wednesday in month.
Amalgamated Society of Carpenters and Joiners, No. 891	L. Quinn	30 Lloyd Street	W. Nicotts	12½ King St. West	Alternate Tuesdays in month.
International Moulders' Union, No. 136	A. Robinson	Oshawa	L. Hungerford	Box 32, Oshawa	3rd Thursday in month.
Ottawa:					
Bricklayers' International Union (Stone Masons), No. 7	R. Reardon	14 Elizabeth Street	A. Findlay, Jr.	313 Sunnyside Ave.	2nd Monday in month.

Bricklayers', Masons' and Plasterers' International Union, No. 14	J. Cameron	Parkdale	M. Floury	214 Patterson Street	Alternate Mondays in month.
International Brotherhood of Blacksmiths and Helpers, No. 446	H. La Breche	291 Breeze Hill Avenue	M. Aspinall	522 Laurier Avenue	2nd and 4th Monday in month.
International Brotherhood of Bookbinders, No. 173	B. Thomas	516 Laurier Avenue	W. McDowell	335 James Street	2nd Friday in month.
Amalgamated Society of Carpenters and Joiners, No. 892	T. Killoran	198 Albert Street	R. Lamb	583 McLeod Street	1st and 3rd Thursday in month.
United Brotherhood of Carpenters and Joiners, No. 93.	C. Stinson	206 Armstrong Street	E. Belair	267 Clarence Street	Every Thursday in month.
Brotherhood of Railway Carmen, No. 230	C. Leach	19 Armstrong Street	W. Shaw	123 Eccles Street	Last Thursday in month.
Order of Railway Conductors, No. 29	W. Dickson	116a 4th Avenue	J. Morris	305 Bronson Avenue	2nd and 4th Sunday in month.
Brotherhood of Locomotive Engineers, No. 168	J. Wilson	70 Elm Street	J. Chisholm	603 Wellington Street	2nd and 4th Sunday in month.
Brotherhood of Locomotive Engineers, No. 469	P. Roy	92nd Avenue	I. Johnson	137 Hawthorne Ave.	Alternate Sundays in month.
Stationary and Operating Engineers, No. 473	C. Lewis	21 Garland Avenue	C. Lake	267 Preston Street	2nd and 4th Wednesday in month.
Brotherhood of Locomotive Firemen and Enginemen, No. 81	J. Halden	77 College Avenue	J. Eldridge	67 Frank Street	2nd and 4th Thursday in month.
International Association of Machinists, No. 412	E. Neumann	65 Anderson Street	W. McPherson	372 Laurier Avenue	2nd and 4th Friday in month.
International Brotherhood of Maintenance of Ways Employees, No. 223	G. Owens	102 Spadina Avenue	J. Martel	Hammond	4th Sunday in month.
International Moulders' Union, No. 280	G. McAuley	45 Arthur Street	E. Taylor	29 Sophia Street	1st and 3rd Thursday in month.
American Federation of Musicians, No. 180	J. Delaney	Wellington Apartments, Wellington Street	E. Cockburn	423 Lisgar Street	Last Sunday in month.
International Brotherhood of Painters and Decorators, No. 200	H. Herbert	Turner Street	E. Brandt	57 Bayswater Avenue	1st and 3rd Wednesday in month.
International Brotherhood of Papermakers, No. 34	A. Hickman	28 Bridge St., Hull	A. Renaud	656 Laurier W., Ottawa	1st and 2nd Sunday in month.
Operative Plasterers' International Association, No. 124.	E. Lenton	2 Capital Park	J. Herdman	183 Creighton St.	1st and 3rd Tuesday in month.
International Plasterers' Labourers' Union, No. 1	J. Robinson	70 Vittoria Street	C. Alexander	Cummings Bridge P.O., Ottawa	2nd and 4th Thursday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Ottawa.—*Continued.*					
United Association of Journeymen Plumbers, etc., No. 71.	G. London	200 Preston Street	W. Fogarty	314 Slater Street	2nd and 4th Wednesday in month.
International Pressfeeders' & Assistants' Union, No. 9	J. Rooney	711 King Edward Ave.	O. Bureau	289 St. Andrew St.	2nd Monday in month.
International Printing Pressmen's Union, No. 5	D. McCann	110 Florence Street	A. Larden	327 Bell Street	3rd Friday in month.
Amalgamated Sheet Metal Workers, No. 47	W. Morgan	23 Rosemount	H. Ken	288 Kent Street	1st and 3rd Thursday in month.
Amalgamated Association of Street and Electric Railway Employees, No. 279	J. O'Brien	211 Slater Street	P. Jennings	8 Bell Street	1st and 3rd Friday in month.
International Alliance of Theatrical Stage Employees, No. 95	R. Marcil	191 St. Andrew Street.	D. Casey	52 Gloucester Street	1st Sunday in month.
International Steel and Copper Plate Printers, No. 6	W. Kent	Wellington Street	F. Muhlig	47 Strathcona Ave.	1st Wednesday in month.
Journeymen Stonecutters' Association of North America.	N. Meunier	148 Murray Street	J. Jackson	32 Newton Street	2nd and 4th Friday in month.
Journeymen Tailors' Union of America, No. 143	R. Page	488 Lisgar Street	C. Milne	438 McLeod Street	3rd Monday in month.
Brotherhood of Railway Trainmen, No. 185	J. Maloney	62 Henderson Avenue.	H. Brown	540 Lyon Street	Alternate Sundays.
International Typographical Union, No. 102	P. Draper	112 Florence Street	A. Sheppard	159 Stanley Avenue	1st Saturday in month.
National Typographical Union, No. 1	R. Niles	47 Mosgrove Street	F. Guthaus	209 McKay Street	2nd Saturday in month.
Owen Sound:					
Bricklayers', Masons' and Plasterers' International Union, No. 11	W. Malcolm	500 5th Street East	S. Maher	741 9th St. East	1st and 3rd Wednesday in month.
United Brotherhood of Carpenters and Joiners, No. 1353	B. Hartford	368 16th Street East.	J. Eddington	357 10th St. East	2nd and 4th Wednesday in month.
Canadian Association of Stationary Engineers, No. 25.	E. Hooey	1524 5th Avenue West.	W. Needham	2089 3rd Ave. East	Every Thursday in month.

International Moulders' Union, No. 413	T. McGee	c|o 369 10th Street E.	C. Cashore	369 10th St. East	1st and 3rd Friday in month.
Journeymen Stonecutters' Association of North America	G. Perkins	830 6th Avenue West	E. Gaskell	1132 4th Ave. East	2nd and 4th Friday in month.
Palmerston:					
Order of Railway Conductors, No. 492	A. Garretson	Cedar Rapids, Iowa	D. Cox	15 Raglin Street	2nd Sunday in month.
Brotherhood of Locomotive Firemen and Enginemen, No. 181	A. Dickel	Palmerston	T. Lee	Box 122, Palmerston	1st and 3rd Sunday in month.
Parry Sound:					
International Association of Machinists, No. 518	W. Heitman	Parry Sound	J. Jones	Box 423, Parry Sound.	1st and 3rd Tuesday in month.
International Brotherhood of Maintenance of Ways Employees, No. 447	J. Darling	Shawanaga P.O.	C. Smith	Box 30, Parry Sound	Last Saturday in 2nd month from last Saturday in Jan., 1913.
Pembroke:					
International Brotherhood of Maintenance of Ways Employees, No. 221	J. Murphy	Pembroke	A. Austin	Pembroke	
Peterborough:					
Journeymen Barbers' International Union, No. 402	G. Campbell	176 Charlotte St.	G. Hall	436 George St.	Last Monday in month.
Bartenders' Union, No. 293	T. Palmer	384 Queen St.	J. Chambers	Grand Hotel	Last Saturday in month.
Bricklayers' and Masons' International Union, No. 17	H. Phillips	Roger St.	W. Stevens	Box 778, Peterborough.	1st and 3rd Tuesdays in month.
United Brotherhood of Carpenters and Joiners, No. 672	J. Maharry	Box 505, N. Monaghan.	G. Sloan	518 Chamberlain St.	2nd Monday in month.
International Brotherhood of Electrical Workers, No. 261.	W. Stazicker	Peterborough	E. Tucker	463 Albert St.	2nd and 4th Wednesday in month.
Federated Association of Letter Carriers, No. 22	J. Grisdale	493 Cross St.	F. Edwards	456 College St.	1st Wednesday in month.
International Brotherhood of Maintenance of Ways Employees, No. 211	J. Daly	146 Aylmer St.	G. Tummon	Leaside, via Leaside Junction	At call of President.
International Moulders' Union, No. 191	W. Weese	473 McDonnell St.	W. Mowry	457 Cedar St.	1st and 3rd Thursdays in month.
Pattern Makers' League of North America	E. Hardie	557 Patterson St.	H. Carter	Box 844, Peterborough	2nd and 4th Thursdays in month.
Journeymen Tailors' Union of America, No. 23	C. Strimas	Simcoe St.	A. Ward	516 Water St.	4th Tuesday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Peterborough.—*Continued.*					
United Textile Workers of America (Carpet Weavers), No. 663	G. Skelding	30 Ware St.	T. Dark	c-o Claraday P.O.	3rd Monday in month.
International Typographical Union, No. 248	J. Dillon	303 Mark St.	C. Hammacott	413 Bethune St.	1st Saturday in month.
Porcupine:					
Western Federation of Miners, No. 145	M. Guinney	Box 521, S. Porcupine.	M. McDonald	Box 521, S. Porcupine.	Sunday and Thurday in week.
Port Arthur:					
Bartenders' Int. League, No. 757	J. Walker	67 Machar Ave.	L. Beninger	115 Court St.	1st and 3rd Sundays in month.
Amalgamated Society of Carpenters and Joiners, No. 893	P. Manning	42 Ontario St.	D. Mantle	218 Banning St.	2nd and 4th Mondays in month.
United Brotherhood of Carpenters and Joiners, No. 285	H. Wilson	227 Wolseley St.	W. Robertson	108 Court St.	1st and 3rd Mondays in month.
Brotherhood of Railway Carmen, No. 347	D. Brooks	150 Pine St.	H. Cardy	166 Second St.	3rd Wednesday in month.
Order of Railway Conductors, No. 536	A. Bolduc	354 Bay St.	J. Ferguson	142 Second St.	2nd and 4th Sundays in month.
International Brotherhood of Electrical Workers, No. 367.	A. McRae	Western Hotel	C. Lambert	125 Algoma St.	2nd and 4th Wednesdays in month.
Canadian Association of Stationary Engineers, No. 29	J. Insley	370 Dufferin St.	S. Smith	506 Van Norman St.	1st and 3rd Fridays in month.
Brotherhood of Locomotive Firemen and Enginemen, No. 593	E. C. Schaubacher.	310 Fort St.	W. R. McDonald	Over Bank of Hamilton, Port Arthur	2nd and 4th Fridays in month.
International Longshoremen's Association (Coal Handlers), No. 319	F. Colosino	521 McLaughlin St.	J. Tiboni	521 McIntosh St. Fort William	3rd Saturday in month.
International Association of Machinists, No. 820	A. Boyd	368 Wiley St.	C. Munn	Port Arthur	3rd Tuesday in month.
International Brotherhood of Steam Shovel and Dredgemen, No. 9	J. Quackenbush	111 S. Brodie St.	O. York	Box 70, Fort William.	4th Saturday in month

Journeymen Stonecutters Association of North America	J. Lockie	18 Catharine St.	R. Paton	109 Empire Ave.	2nd and 4th Tuesday in month.
International Typographical Union, No. 575	W. Lawrence	Centre St.	T. Wynn	Box 480, Port Arthur	2nd Tuesday in month.
Port Hope:					
International Moulders' Union, No. 189	O. Moffat	Port Hope P.O.	R. Bennett	Box 84, Port Hope	1st and 3rd Monday in month.
Preston:					
International Moulders' Union, No. 314	W. Kennedy	Preston.	J. McKenna	Box 699, Preston	1st and 3rd Wednesday in month.
Metal Polishers, Buffers, Platers, and Brass Workers' International Union, No. 27	A. Wright	Preston.	F. Schartzberg	Box 374, Preston.	3rd Tuesday in month.
Stove Mounters' International Union, No. 11	H. Storey	Waterloo St.	J. Tobin	Preston	1st and 3rd Friday in month.
Rainy River:					
Brotherhood of Railway Carmen, No. 436	W. Turner	Rainy River	B. Franks	Box 49, Rainy River	3rd Friday in month.
Order of Railway Conductors, No. 30	A. Garretson	Cedar Rapids, Iowa	S. McIlroy	Box 236, Rainy River	1st and 3rd Sunday in month.
Canadian Brotherhood of Railway Employees, No. 51	F. Potter	Rainy River	D. McLennan	General Delivery, Rainy River	3rd Friday in month.
Brotherhood of Locomotive Engineers, No. 749	H. Mills	Rainy River	D. Johnson	Box 154, Rainy River	2nd and 4th Thursday in month.
Brotherhood of Locomotive Firemen and Enginemen, No. 750	W. Douglas	Box 189, Rainy River.	W. Smith	Box 188, Rainy River	2nd and 4th Thursday in month.
Brotherhood of Railway Trainmen, No. 828	V. Bartlett	Rainy River	R. Whitney	Box 162, Rainy River	2nd and 4th Sunday in month.
St. Catharines:					
Barbers' Union, No. 1	H. Stutt	St. Paul St.	A. Haynes	293 St. Paul St.	1st and 3rd Monday in month.
International Brewery Workmen, No. 305	W. Wiley	Cherry St.	G. Whitton	34 Maple St.	3rd Friday in month.
Bricklayers', Masons', and Plasterers' International Union, No. 4	J. Powder	11 Raymond St.	A. Greenlaw	29 Dacotah St.	Every Tuesday in month.
Amalgamated Society of Carpenters and Joiners, No. 89	J. Trueman	74 Concord Ave.	J. Haine	61 Division St.	Alternate Thursdays in month.
United Brotherhood of Carpenters and Joiners, No. 38	J. Dunklee	35 George St.	J. Carty	19 Cherry St.	Every Friday in month.
Cigarmakers' International Union, No. 140	W. Haynes	13½ Cherry St.	L. Coyle	138 Church St.	1st Saturday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
St. Catharines:—*Continued.*					
International Brotherhood of Electrical Workers, No. 303	R. Jones	23 Ontario St.	G. Flower	101 Vine St.	1st and 3rd Monday in month.
Federated Association of Letter carriers, No. 17	T. Henderson	2 Nelson St.	F. Whitton	36 Academy St.	Last Friday in month.
International Association of Machinists, No. 268	W. Dewey	110 Welland Ave.	J. Rothwell	58 Lake St.	2nd and 4th Friday in month.
International Moulders' Union, No. 385	H. Grey	63½ Queenston St.	F. Keene	39 Albert St.	2nd and 4th Friday in month.
Brotherhood of Painters, Decorators an Paperhangers, No. 407	C. O'Donnell	6 Court St.	W. Outram	30 Nelson St.	2nd and 4th Wednesday in month.
Metal Polishers, Buffers, Platers and Brass Workers' International Union, No. 97.	L. Tufford	29 Catharine St.	L. Shaw	159 Russell Ave.	1st and 3rd Friday in month.
Journeymen Tailors' Union of America, No. 235	F. Coyle	Grand Central Hot l, S. Paul St.	J. Wiley	9 Louisa St.	1st Wednesday in month.
International Typographical Union, No. 416	R. Widdicombe	c-o Barber & Co., Ontario St.	D. Marshall	33 Henry St.	Last Monday in month.
St. Mary's:					
Journeymen Stonecutters' Association of North America.	S. Griggs	Washington, D. C.	W. McCauley	Box 811, St. Mary's	1st and 3rd Monday in month.
St. Thomas:					
Journeymen Barbers' International Union, No. 222	H. Walsh	715 Talbot St.	J. Kelly	494 Talbot St.	Last Thursday in month.
Canadian Blacksmiths and Helpers' Union, No. 94	J. Lumley	11 West Ave.	J. Wall	84 Chestnut St.	1st and 2nd Tuesday in month.
Brotherhood of Boilermakers and Iron Ship Builders of America, No. 413	J. King	35 Balaclava St.	F. Roberts	61 Wilson Ave.	2nd and 4th Tuesday in month.
Bricklayers' and Masons' International Union, No. 8	J. Murray	Fifth Ave.	O. Beal	85 Erie St.	2nd and 4th Wednesday in month.
United Brotherhood of Carpenters and Joiners, No. 1,798.	C. Smith	22 Walnut St.	C. Willcox	5 Wolfe St.	1st and 3rd Friday in month.
Cigarmakers' International Union, No. 420	G. Haslam	100 Curtis St.	F. Roberts	7 Balfour St.	1st Friday and 3rd Saturday in month.

Order of Railway Conductors, No. 13	W. Ryan	49 Mitchell St.	K. Hastings	48 Southwick St.	2nd and 4th Sunday in month.
Brotherhood of Locomotive Engineers, No. 132	T. Quick	Queen's Hotel	T. Duffey	Wellington St.	Every Monday in month.
Brotherhood of Locomotive Engineers, No. 529	J. McGregor	23 Yarwood St.	A. Martin	52 Manitoba St.	Every Tuesday in month.
Brotherhood of Locomotive Engineers, No. 661	C. Wilson	43 Southwick St.	H. Buckpitt	45 Mitchell St.	Every Wednesday in month.
Amalgamated Society of Engineers, No. 754	T. Birchall	St. Thomas	R. Edleston	1 Smith's Ave.	Fortnightly.
Brotherhood of Locomotive Firemen and Enginemen, No 5	R. Anthony	8 Myrtle Ave.	W. Scott	24 Maple St.	Fridays at 2 p.m.
Federated Association of Letter Carriers, No. 25	[illegible] McDonald	132 Alma St.	C. Shuchcombe	37 Owaissa St.	
International Association of Machinists, No. 294	J. Gray	Forest Ave.	J. Stewart	56 Redan St.	1st and 3rd Tuesday in month.
International Association of Machinists' Helpers and Labourers, No. 946	C. Kaye	17 Maple St.	G. Brandon	7 Arthur Ave.	Every 2nd Monday in month.
International Association of Steam Fitters and Helpers, No. 107	C. Doritty	8 Maple St.	C. Doritty (acting)		1st and 3rd Wednesday in month.
Brotherhood of Railway Signalmen, No. 27	L. Fallis	44 Erie St.	L. Hoover	Ridgetown	3rd Wednesday in month.
Journeymen Tailors' Union of America, No. 141	[illegible] Garrow	18 Jackson St.	W. Abernethy	30 Ross St.	4th Monday in month.
Brotherhood of Railway Trainmen, No. 47	A. Micks	6 Forest Ave.	H. Sharp	2 John St.	Every Monday in month.
International Typographical Union, No. 459	J. Sutherland	Alma St.	R. Porter	8 Drake St.	2nd Monday in month.
Sarnia:					
Journeymen Barbers' International Union, No. 467	W. Ross	143 Front St.	W. Knight	140 Cromwell St.	1st Tuesday in month.
Bricklayers', Masons' and Plasterers' International Union, No. 23	A. Corrick	George St.	A. Bulloch	232 Divine St.	1st and 3rd Monday in month.
Order of Railway Conductors, No. 189	J. Murphy	434 Wellington St.	H. Bell	288 Campbell St.	1st and 3rd Tuesday in month.
Brotherhood of Locomotive Engineers, No. 240	H. Steel	Mitten St.	J. Copeland	140 Savoy St.	
International Longshoremen's Association, No. 253	J. Foster	216 Bruce St.	B. Shealtis	246 River St.	1st and 3rd Friday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Sarnia.—*Continued.*					
Brotherhood of Railway Trainmen, No. 227	D. Hill	Bridgeburg	D. McEachan	125 Margaret St.	1st and 3rd Monday in month.
Sault Ste. Marie:					
Amalgamated Society of Carpenters and Joiners, No. 869	J. Jeffrey	Sault Ste. Marie	J. Nattress	Steelton West	1st and 3rd Monday in month.
Order of Railway Conductors, No. 429	A Garretson	Cedar Rapids, Iowa	J. Hawkshaw	c-o A. C. Railway	3rd Sunday in month.
Brotherhood of Locomotive Engineers, No. 67	J. Cleminson	John St., Steelton	A. Wagner	347 Queen St., Sault Ste. Marie	1st and 3rd Wednesday in month.
Brotherhood of Locomotive Firemen and Enginemen, No. 606	J. Robb	129 Salisbury Ave.	T. Rolph	191 Church St.	1st Monday and 3rd Sunday in month.
International Association of Machinists, No. 485	J. Kennedy	Sault Ste. Marie	G. Carron	Edinburgh St., Steelton.	1st and 3rd Thursday in month.
International Moulders' Union No. 391	J. Durrance	Highland Park.	E. Wood	44 Chestnut St.	3rd Friday in month.
International Brotherhood of Papermakers, No. 133	R. Creamer	Hotel Sup Club	V. Page	Hotel Sup Club	2nd and 4th Sunday in month.
United Association of Plumbers, Gas Fitters, Steam Fitters and Helpers, No. 414	J. McLeod	18 Dennis St.	J. Dew	131 Trelawn Ave.	2nd and 4th Thursday in month.
International Union of Wood, Wire and Metal Lathers, No. 191.	J. Bullock	49 Borron Ave.	J. W. Bulloch	49 Borron Ave., Pim Hill.	1st Friday in month.
Schreiber:					
Brotherhood of Locomotive Firemen and Enginemen, No. 387	W. Hughes	Box 33, Schreiber	E. Cambridge	Box 173, Schreiber	1st Sunday and 3rd Wednesday in month.
International Machinists' Helpers, No. 927	G. Bailey	Box 45, Schreiber.	F. Baker	Box, 45 Schreiber	1st and 4th Tuesday in month.
Brotherhood of Railway Trainmen, No. 419	J. Ross	Schreiber.	R. Bell	Schreiber.	2nd and 4th Monday in month.
Silver Centre:					
Western Federation of Miners, No. 148	F. Taffrey	Silver Centre	J. Redmond	Silver Centre.	Every Sunday in month.

Smith's Falls:					
Bricklayers', Masons' and Plasterers' International Union, No. 21	H. Kendall	Elm St.	A. Johnston	Box 231, Smith's Falls	2nd and 4th Thursday in month.
Brotherhood of Locomotive Engineers, No. 381	A. Boyd	Winnifred St.	G. McGloughlin	Box 342, Smith's Falls	1st and 3rd Tuesday in month.
International Brotherhood of Maintenance of Ways Employees, No. 136	I. Laing	Mountain.	H. Hewitt	Mountain.	Last Saturday in March, June, September and December.
International Moulders' Union, No. 201	J. Driscoll	Smith's Falls.	G. Crate	Box 263, Smith's Falls	1st and 3rd Tuesday in month.
Brotherhood of Railway Trainmen, No. 245	A. Anderson	Church St.	D. Hallinan	Railway Ave.	1st and 3rd Tuesday in month.
Brotherhood of Railway Trainmen No. 527	C. Neil	Smith's Falls.	J. Goldsmith	Box 237, Smith's Falls	1st Monday and 3rd Wednesday in month.
Stratford:					
Journeymen Barbers' International Union, No. 136	W. Nelson	Albert St.	G. Spriggs	273 Ontario St.	Last Monday in month.
Brotherhood of Boilermakers and Iron Ship Builders' and Helpers, No. 3	F. Williams	124 Perth Ave.	W. Pepper	120 Nelson St.	1st and 3rd Friday in month.
Bricklayers', Masons' and Plasters' International Union, No. 24	G. Fink	Nelson St.	W. Lewis	107 Milton St.	2nd and 4th Thursday in month.
Cigarmakers' International Union, No. 424	M. Whalen	179 Church St.	J. Hagarty	179 St. David St.	1st Wednesday in month.
Order of Railway Conductors No. 15	D. McHaffie	231 Ontario St.	R. Buchanan	37 Milton St.	2nd and 4th Sunday in month.
Brotherhood of Locomotive Engineers, No. 188	W. Brown	141 Douro St.	J. Battley	185 Douro St.	1st and 3rd Sunday in month.
Amalgamated Society of Engineers, No. 597	H. Dickie	Guelph St.	W. Kidnew	108 Mowat St.	Every 2nd Saturday in month.
Brotherhood of Locomotive Firemen and Enginemen, No 38	C. Reinhart	295 Queen St.	J. Spencer	24 Ballantine Ave.	2nd and 4th Sunday in month.
International Association of Machinists, No. 103	E. Nesbitt	42 Mowat St.	F. Polley	195 Waterloo St.	2nd and 4th Monday in month.
International Typographical Union, No. 139	G. Wreford	Stratford.	C. McDonald	17 Nile St.	1st Saturday in month.
Sudbury:					
Bartenders' International League, No. 237	A. Gatieu	Sudbury.	A. Ranges	Box 286, Sudbury.	Every 2nd Monday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President.	President's Address.	Name of Secretary.	Secretary's Address.	Nights of Meeting.
Sudbury.—*Continued.*					
Amalgamated Society of Carpenters and Joiners, No. 9	W. Harper	Sudbury P.O.	W. Clarke	Box 642, Sudbury.	Alternate Fridays in month.
Thorold:					
United Brotherhood of Carpenters and Joiners, No. 1,677	W. McMillin	Thorold.	H Manley	Pine St.	Every 3rd Thursday in month.
Toronto:					
International Bakers and Confectionery Workers, No. 181	A. Ladovsky	262 Markham St.	M. Lifshitz	267 Dundas St.	Every Friday.
Journeymen Barbers' International Union, No. 517	W. Howard	1452 Queen St. W.	J. Tennyson	177 George St.	4th Thursday in Month.
International Alliance of Billposters and Billers, No. 40	W. Recres	Majestic Theatre	W. Gimblette	15 Temperance St.	2nd Sunday in month.
International Brotherhood of Boilermakers and Iron Ship Builders and Helpers, No. 548	J. Smith	162 Annette St.	W. Hewitt	169 Mulock Ave	1st and 3rd Friday in month.
International Brotherhood of Bookbinders, No. 28	D. Niell	560 Concord Ave.	W. Sullivan	54 Massey St.	2nd Monday in month.
Canadian National Bookbinders' Union, No. 1.	F. Martin	Salem Ave.	G. Collins	39 Markham St.	1st and 3rd Monday in month.
Boot and Shoe Workers' International Union, No. 233	A. Headley	101 Essex Ave.	W. Brown	22 Wascana Ave.	Every Monday in month.
International Brewery Workers' Union, No. 304	E. Harris	191 River St.	J. Corcoran	Labour Temple.	2nd and 4th Friday in month.
International Brewery Workers' Union, No. 317	J. Dowling	7 Leslie St.	A. Cheeseman	62 Greenwood Ave.	2nd and 4th Thursday in month.
Bricklayers' International Union, No. 2	H. Hillier	503 Sackville St.	J. Bamber	Labour Temple.	Every Tuesday in month.
Bricklayers', Masons' and Plasterers' International Union, No. 26	A. Webb	34 Primrose Ave.	C. Robb	901 Shaw St.	1st and 3rd Thursday in month.
Broom and Whisk Makers' International Union, No. 55	W. Kirkstead	Deer Park P.O.	C. Christopher	230 Heath St.	2nd Monday in month.
Brotherhood of Railway Carmen, No. 258	J. McEwan	94 Prescott Ave.	A. Stone	32 Mulock Ave.	3rd Wednesday in month.

Brotherhood of Railway Carmen, No. 511	W. Winters	7 Grove Ave.	T. Ellicott	255 Bellwoods Ave.	3rd Monday in month.
Amalgamated Society of Carpenters and Joiners, (First Branch), No. 798	A. Fenney	95 Carlaw Ave.	E. Bales	Labour Temple.	Alternate Mondays in month.
Amalgamated Society of Carpenters and Joiners, (Second Branch), No. 902	H. Gallop	101 Millicent St.	C. Fraser	24 Grove Ave.	Alternate Mondays from January 13, 1913.
Amalgamated Society of Carpenters and Joiners, (Third Branch), No. 903	G. Sellers	6 Manchester Ave.	G. Thomson	223 Lippincott St.	2nd and 4th Wednesday in month.
Amalgamated Society of Carpenters and Joiners (Fourth Branch), No. 801	J. Doggett	279 Ashdale Ave.	A. Udall	26 Howe Ave.	Alternate Mondays from January 13, 1913.
Amalgamated Society of Carpenters and Joiners, (Fifth Branch), No. 867	H. Tooke	39 Balmuto St.	W. Burrow	28 Ivy Ave.	Every other Tuesday from January 14, 1913.
Amalgamated Society of Carpenters and Joiners, (Sixth Branch), No. 906	G. Nicholls	1206 Gerrard St East	T. Gazey	114 Chester Ave.	1st and 3rd Tuesday in month.
Amalgamated Society of Carpenters and Joiners, (Seventh Branch),	F. Grant	12 Gormley Ave.			2nd and 4th Monday in month.
United Brotherhood of Carpenters and Joiners, No. 1,553	M. Walker	16 Eglinton Ave.	H. Rackham	420 Merton St.	1st and 3rd Friday in month.
United Brotherhood of Carpenters and Joiners, No. 1,820	G. Mallinson	200 Spadina Ave.	T. Jackson	299 Berkeley St.	1st and 3rd Wednesday in month.
Cigarmakers' International Union, No. 27	J. McCarthy	118 Manning Ave.	J. Pamphilon	Room 106, 88 Church St.	3rd Monday in month.
Order of Railway Conductors, No. 345	A. Garretson	Cedar Rapids, Iowa.			2nd and 4th Sunday in month.
Order of Railway Conductors, No. 531	A. Garretson	Cedar Rapids, Iowa.	D. Rogers	39 Jameson Ave.	1st and 3rd Sunday in month.
International Brotherhood of Electrical Workers, No. 114	J. Curran	157½ Roncesvalles Ave.	W. Brampton	35 Woodycrest Ave.	2nd and 4th Thursday in month.
International Brotherhood of Electrical Workers, No. 353.	J. Noble	184 Parliament St.	E. Love	330 Ontario St.	1st and 3rd Wednesday in month.
Hoisting and Portable Engineers, (I. U. S. E.), No. 356.	T. Nott	6 Ossington Crescent	W. Buker	135 Montrose Ave.	1st and 3rd Wednesday in month.
Brotherhood of Locomotive Engineers, No. 295	A. Scruton	44 McKenzie Crescent	W. Curruthers	73 Laws St.	1st Sunday and 3rd Monday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Toronto:—*Continued.*					
International Union of Steam Engineers, No. 152	J. Jones	168 Montrose Ave.	H. Scott	167 Church St.	2nd and 4th Wednesday in month.
Brotherhood of Locomotive Firemen and Enginemen, No. 67	G. Crowhurst	90 Wolseley St.	J. Pratt	218 Fern Ave.	1st Thursday and 3rd Sunday in month.
Brotherhood of Locomotive Firemen and Enginemen, No. 262	D. Taylor	71 Law St.	W. Blevins	74 Fairview Ave.	2nd and 4th Sunday in month.
Brotherhood of Locomotive Firemen and Enginemen, No. 596	T. McCabe	27 Kimberley Ave.	H. Schaefer	36 Lyall Ave.	At call of President.
International Brotherhood of Stationary Firemen, No. 300	A. Woodward	761 Markham St.	H. McCaffrey	272 Dupont St.	2nd and 4th Thursday in month.
Fur Workers' Union, No. 14,187	S. Rash	64 Oxford St.	J. Weisbrod	63 Centre Ave.	Every Wednesday in month.
International Garment Workers Union, (Ladies) No. 14	A. Goldman	28 Ulster St.	—Yampolsky	122 Agnes St.	Every Monday in month.
United Garment Workers' Union, (Cutters and Trimmers), No. 185	H. Yardley	241 Jarvis St.	F. Rumbell	494 Ontario St.	2nd and 4th Friday in month.
United Garment Workers' of America, No. 202	Miss A. Oster	169 Dundas St.	Miss M. Schrix	152 Booth Ave.	2nd Monday in month.
Gilders' and Finishers' Union, No. 636	F. Heaslip	118 Ann St.	W. Smith	11 Bradd St.	1st and 3rd Friday in month.
American Flint Glass Workers' Union, No. 45	W. Kelly	232 1st Ave.	F. Stoffel	5 West Avenue	1st Saturday in month.
International Glass Blowers' Association, No. 66	B. Johnson	38 Beaconsfield Ave.	H. Munn	164 Argyle St.	1st Saturday in month.
International Association of Glass Workers, No. 21	J. McKenna	169 Wolfrey Ave.	L. Swain	92 Jones Ave.	2nd and 4th Friday in month.
Lithographers' International Association, No. 12	F. Morrice	420 Manning Ave	J. Christie	104 Palmerston Ave.	2nd and 4th Wednesday in month.
Longshoremen's International Association, No. 646	J. Dowling	119 Leslie St.	S. Stalford	2 Curzon St.	3rd Sunday in month.

International Association of Machinists, No. 235	W. Hagen	814 Queen St. E.	G. Crossman	273 Arthur St.	2nd and 4th Wednesday in month.
Mailers' Union, (I.T.U.), No. 5	T. Morton	120 Pearson Ave.	J. Gallagher	50 Beaconsfield Ave.	2nd Sunday in month.
International Brotherhood of Maintenance of Ways Employees, No. 419	T. Irwin	58 Dupont St.	W. Noyes	86 Wright Ave.	3rd Saturday in month.
International Association of Marble Workers, No. 12	W. Mullen	102 William St.	C. Fraser	254 Broadview Ave.	1st and 3rd Thursday in month.
International Association of Marble Workers, No. 99	F. Chester	46 Withrow Ave.	F. Metcalf	56 Kenneth Ave.	1st and 3rd Thursday in month.
International Association of Marble Workers (Setters' Helpers), No. 100	D. Crozier	157 Strachan Ave.	S. Baxter	61a Bleeker St.	1st and 3rd Friday in month.
International Moulders' Union, No. 28	W. Mahan	67 Markham St.	R. Harris	110 Ossington Ave.	1st and 3rd Wednesday in month.
International Moulders' Union, (Brass), No. 207	A. Mann	205 Victor Ave.	W. Jones	19 Tiverton Ave.	1st and 3rd Friday in month.
American Federation of Musicians, No. 149	J. Jarrott	1245 King St., W.	J. Ball	Musicians' Temple, University Ave.	1st Sunday in month.
Brotherhood of Painters, Paperhangers and Decorators, No. 3	J. Stevenson	47 Curzon St.	J. Williams	2 Prospect St.	2nd and 4th Tuesday in month.
Brotherhood of Painters, Paperhangers and Decorators, No. 219	W. Hunter	63 Augusta Ave.	J. Hopper	345 Parliament St.	1st and 3rd Wednesday in month.
Brotherhood of Painters, Paphangers and Decorators, (Sign Writers), No. 737	A. Murray	866 Palmerston Ave.	C. Risley	210 Sherbourne St.	2nd and 4th Wednesday in month.
Patternmakers' League of North America	J. Hellicker	191 Bolton Ave.	W. Renwick	413 Dundas St.	2nd and 4th Monday in month.
International Photo-Engravers' Union, No. 35	N. Slean	6 Grace St.	N. Smith	184 Grange Ave.	1st Monday in month.
Operative Plasterers' International Association, No. 48	J. Larkin	21 Galt Ave.	W. Hamilton	307 Salem Ave.	2nd and 4th Thursday in month.
United Association of Plumbers, Gas and Steam Fitters and Helpers, No. 46	W. Hogg	16 Baden St.	R. Pratt	1133 Dovercourt Road	2nd and 4th Friday in month.
Webb Pressman's Union, No. 1	J. McKay	Star Office.	W. Hall	113½ Lansdowne Ave.	3rd Monday in month.
Printing Press Assistants' and Feeders' Union, (C. F. of L.), No. 1	T. Morton	13 Dean St.	F. Attrell	161 Wheeler Ave.	1st Thursday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
Toronto.—*Con.*					
Printing Pressmen's Union, (C. F. of L.), No. 10	B. Hurd	118 Wheeler Ave.	A. Cook	25 Birch Ave.	2nd Monday in month.
International Union of Slate and Tile Roofers, No. 39	J. Hall	108 Claremont St.	E. Brooke	209 University Ave.	1st and 3rd Monday in month.
International Association of Steam Fitters, No. 78	E. Lawson	110 Geoffrey St.	F. Black	1344 Queen St. W.	2nd and 4th Friday in month.
Amalgamated Sheet Metal Workers' International Alliance, No. 30	D. McCarthy	669 Manning Ave.	A. Murray	40 Hastings Ave.	1st and 3rd Friday in month.
International Brotherhood of Steam Shovel and Dredgemen, No. 46	L. Morrison	29 Herman Ave.	G. McEnaney	63 Aziel St.	3rd Sunday in month.
Journeymen Stonecutters Association of North America	D. Crockett	340 Montrose Ave.	D. Robertson	12 Isabella St.	nd and 4th Friday in month.
Amalgamated Association of Street and Electric Railway Employees, No. 113	J. Scott	136 Wright Avenue	J. Gibbons	Room 4, Labour Temple	1st Monday and 3rd Sunday in month.
Journeymen Tailors' Union of America, No. 132	C. Bonter	121 Dundas Street	J. Watt	Labour Temple	2nd and 4th Monday in month.
Journeymen Tailors' Union of America, No. 156	F. Curtts	c/o Agnew, Merchant Tailor	W. Greenwood	213 Symington Ave.	1st Monday in month.
International Union of Tile-setters and Helpers, No. 37.	A. Myles	45 Yarmouth Road	R. Brawley	133 Montrose Avenue.	1st and 3rd Friday in month.
International Brotherhood of Teamsters (Coal Drivers), No. 457	W. Osborn	811 Bathurst Street	H. Barton	171 Montrose Avenue.	1st and 3rd Sunday in month.
Commercial Telegraphers' Union of America, No. 1	M. MacKay	79 Hutchison St., Montreal.	C. E. Hill	362 Brock Ave., Toronto.	.....
International Alliance of Theatrical Stage Employees, No. 58	E. Ferris	347 Huron Street	J. Ferris	347 Huron Street	2nd Sunday in month.
International Alliance of Theatrical Stage Employees, No. 173	C. McMahon	260 Queen St. West	G. Eaton	37 Robert Street	1st Sunday in month.
Tobacco Workers' International Union, No. 63	H. Thorn	Scollard Street	F. Helliwell	171 Marlborough Ave.	.....

Brotherhood of Railway Trainmen, No. 255	T. McGuire	115 Fermanagh Ave.	J. Miller	224 Fairview Avenue	1st and 3rd Sunday in month.
Brotherhood of Railway Trainmen, No. 322	J. Bryan	200 Galley Avenue	H. Meredith	282 Crawford Street	1st and 3rd Sunday in month.
Brotherhood of Railway Trainmen, No. 759	W. Burke	17 Roblock Avenue	F. King	606 Delaware Avenue	1st and 3rd Sunday in month.
International Union of Travellers' Goods and Leather Novelty Workers, No. 5	W. Duncan	195 Osler Avenue	R. Hodge	235 Royce Avenue	2nd Wednesday in month.
International Typographical Union, No. 91	A. Thompson	624 Ontario Street	S. Hadden	77 Victoria Street	1st Saturday in month.
Upholsterers' International Union, No. 30	G. Saunders	286 Euclid Avenue	F. Prior	370 Margueretta St.	1st and 3rd Tuesday in month.
Waiters' Union, No. 300	J. Noakes	1432 Bloor Street	S. Tinker	Room W, Yonge Street Arcade	1st and last Wednesday in month.
Waterloo:					
Journeymen Stonecutters' Association of North America			C. Hinton	45 Eby Street	
Welland:					
Bricklayers', Masons' and Plasterers' International Union, No. 32	G. Scott	Welland	A. Pettitt	Box 448, Welland	Every Wednesday in month.
Amalgamated Society of Carpenters and Joiners, No. 809	G. Urquhart	Garner Avenue	F. Edwards	Box 23, Welland	2nd and 4th Monday in month.
United Brotherhood of Carpenters and Joiners, No. 969	R. Mann	Merritt Street	B. Jackson	Box 897, Welland	2nd and 4th Friday in month.
United Garment Workers' Union, No. 274	Alice Noble	173 Welland Street	Christine-McArthur	23 Merritt Street	1st Tuesday in month.
International Association of Machinists, No. 131	J. Hedrick	Welland Street	W. Noble	108 Regent Street	1st and 3rd Monday in month.
International Moulders' Union, No. 472	D. Kirk	P.O., Welland	E. Jones	57 Randolph Street	1st and 3rd Friday in month.
Order of Railway Telegraphers, No. 16	J. Culkins	Albion, Mich.	J. Staley	Box 203, Welland	1st Monday in month.
Windsor:					
Journeymen Barbers' International Union, No. 451	W. Holmes	Sandwich St. East	A. Wickens	18 Ouellette Avenue	4th Wednesday in month.
Bricklayers', Masons' and Plasterers' International Union, No. 6	G. Hewitt	144 Bruce Avenue	R. Thompson	72 Cameron Avenue	Every Tuesday in month.
Order of Railway Conductors, No. 494	D. Stuart	King George Hotel	G. Jackson	114 Goyeau Street	2nd and 4th Sunday in month.

DIRECTORY OF LABOUR ORGANIZATIONS IN ONTARIO.—*Concluded.*

Name of Organization.	Name of President	President's Address	Name of Secretary	Secretary's Address	Nights of Meeting.
United Garment Workers of America, No. 190	Mrs. E. Overs	126 Assumption Street	Miss N. Lefebvre	246 Windsor Avenue	2nd Wednesday in month.
Federated Association of Letter Carriers, No. 16	C. Stricker	Crawford Avenue	C. Stowe	16 Pelissier Street	No set time of meeting.
International Brotherhood of Locomotive Engineers, No. 390	J. McGarval	73 Assumption Street	G. Richardson	59 Aylmer Street	2nd and 4th Thursday in month.
National Association of Marine Engineers, No. 11	A. McDonald	28 Crawford Avenue	N. Maitland	221 London Street, W.	
American Federation of Musicians, No. 566	P. Tschishart	35 Pitt Street East	H. Philp	88 Goyeau Street	2nd Wednesday in month.
Operative Plasterers' International Association, No. 345	J. Adams	21 Marentette Avenue.	F. Kloske	62 Windsor Avenue	1st and 3rd Tuesday in month.
United Association of Plumbers and Steam Fitters, No. 552	J. Fletcher	205 Goyeau Street	T. Mathewson	192 London Street	1st and 3rd Friday in month.
Switchmen's Union of North America, No. 184	T. Barrons	38 Curry Avenue	J. Alldritt	203 London Street	1st and 3rd Thursday in month.
Brotherhood of Railway Trainmen, No. 316	J. Marshall	14 Lincoln Avenue	C. Weldrick	168 Dougall Avenue	1st and 3rd Wednesday in month.
International Typographical Union, No. 553	W. Black	190 Janette Avenue	G. Marentette	98 Albert Street	1st Sunday in month.
Woodstock: Bricklayers', Masons' and Plasterers' International Union, No. 22	S. May	Chaple Street	F. Haines	25 Huron Street	2nd and 4th Tuesday in month.

WAGES AND HOURS OF LABOUR.

The following table shows the average wages per week and hour and the hours of work for organized and unorganized labour. The figures are taken from the schedules returned to us by the secretaries of unions, some being calculated, as the wages per hour from the weekly wages and working hours, or the weekly wages from the daily wages and working hours. It would be more satisfactory if the secretaries themselves gave these details in full, and also were more explicit in reporting the wages and hours for unorganized labour. We may remark that some secretaries report the weekly wages as far lower than the amount of the hourly wages multiplied by the hours of labour, evidently in the cases of the building and other seasonable trades, dividing the yearly wage by the 52 weeks to make an average. This is unnecessary, as the column showing the average days idle gives the material for calculating this reduction when desired, and for obvious reasons it is not desirable to make the weekly wages, when employed, seem less than the reality.

WAGES AND HOURS OF LABOUR.

Table showing average wages per week and hour, and hours of labour, with comparison between those organized and unorganized in localities as reported; also number of days idle and periods of wage payment.

Location and Title of Organization.	Average wages per week.		Average wages per hour.		Hours of labour first 5 days.		Hours on Saturday.		Total hours per week.		Average days idle.	Period of wage payments.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		
ALLANDALE:	$ c.	$ c.	c.	c.								
Order of Railway Conductors, No. 355	25 00	25 00	42	42	50	50	10	10	60	60	none	monthly
Brotherhood of Locomotive Engineers, No. 486	mileage basis		.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 442	mileage basis		.....	.....	mileage basis		.....	.....	.....	.....	.....	monthly
Brotherhood of Railway Trainmen, No. 377	mileage basis		30	30	mileage basis		.....	.....	.....	.....	.....	monthly
AMHERSTBURG:												
International Longshoremen's Asso., No. 377	21 00	15 00	35	25	50	50	10	10	60	60	.....	fortnightly
Int. Rock Drillers' Association, No. 20	19 80	.....	30	.....	55	.....	11	.....	66	.....	100	fortnightly
Int. Bro. of Steam Shovel and Dredgemen, No. 20	35 00	.....	35	.....	60	.....	12	.....	72	.....	60	fortnightly
BEAVERTON:												
Maintenance of Ways Employees, No. 262	10 20	10 20	17	17	50	50	10	10	60	60	.....	monthly
BELLEVILLE:												
Bricklayers and Masons, etc., Union, No. 30	20 00	18 00	37	33	45	45	9	9	54	54	84	week or fort.
Bro. of Loco. Firemen and Enginemen, No. 66	20 00	20 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Bro. of Locomotive Engineers, No. 189	35 00	35 00	39	39	60	60	12	12	72	72	.....	monthly
Bro. of Railway Trainmen, No. 108	18 00	18 00	24	24	.....	.....	.....	.....	.....	.....	10	monthly
BERLIN:												
Journey Barbers' Int. Union, No 304	15 00	15 00	.....	.....	57½	57½	15	15	72½	72½	none	weekly
Boot and Shoe Workers' Union (Male), No. 206	10 80	10 80	18	18	50	50	7½	7½	57½	57½	18	fortnightly
Boot and Shoe Workers' Union (Female), No. 206	8 50	8 50	15	15	50	50	7½	7½	57½	57½	18	fortnightly
Bricklayers and Masons, etc, Union, No. 12	12 00	.....	.....	.....	40	50	8	10	48	60	160	fortnightly
United Bro. of Carpenters and Joiners, No. 553	22 00	18 90	40	35	45	45	9	9	54	54	none	fortnightly
Cigarmakers' International Union, No. 422	11 00	8 00	25	15	40	50	4	10	44	60	30	weekly
Int. Bro. of Electrical Workers (Linemen), No. 535	13 00	.....	22	.....	60	.....	9	.....	69	.....	35	weekly
Can. Asso. of Stationary Engineers, No. 9	15 00	.....	25	.....	50	.....	9	.....	59	.....	.....	fortnightly
Hodcarriers and Builders Labourers, No. 160	15 36	15 36	32	32	40	40	8	8	48	48	.....	fortnightly
Fed. Asso. of Letter Carriers, No. 20	15 00	15 00	25	25	45	45	9	9	54	54	none	fortnightly

United Asso. of Plumbers, etc., No. 527	17 50	12 50	35	25	45	45	5	5	50	50	none	weekly
Journeymen Tailors Union, No. 264 (Male)	12 00	10 00	20	16	50	50	10	10	60	60	.....	weekly
Journeymen Tailors' Union, No. 264 (Female)	7 00	6 00	12½	10	50	50	10	10	60	60	.....	weekly
Upholsterers' Int. Union, No. 42	15 00	13 00	26	24	50	50	9	9	59	59	.....	fortnightly
BLENHEIM:												
Maintenance of Ways Employees, No. 502	9 90	9 90	16½	16½	50	50	10	10	60	60	none	monthly
BRANTFORD:												
Jour. Barbers' Int. Union, No. 298	13 00	.....	21	.....	50	.....	13½	.....	63½	.....	none	weekly
Bartenders' International League, No. 182	15 00	.....	25	.....	45	.....	10	.....	55	.....	.....	week. or fort.
Bricklayers and Masons, etc., Union, No. 9	22 00	15 00	50	35	40	40	4	4	44	44	90	weekly
Unit. Bro. of Carpenters and Joiners, No. 498	19 25	16 00	35	30	50	50	5	5	55	55	75	weekly
Can. Asso. of Stationary Engineers, No. 4	12 00	12 00	.....	.....	50	50	5	5	55	55	none	week. or fort.
Int. Asso. of Machinists, No. 607	16 00	.....	25	.....	50	.....	9	.....	59	.....	.....	fortnightly
American Federation of Musicians, No. 467	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Operative Plasterers' Int. Asso., No. 164	22 50	22 50	45	45	45	45	5	5	50	50	90	weekly
Jour. Stonecutters' Asso. of North America	15 00	.....	30	.....	40	.....	4	.....	44	.....	90	weekly
International Typographical Union, No. 378	16 50	.....	32	.....	42½	.....	5½	.....	48	.....	.....	weekly
BRIDGEBURG:												
Brotherhood of Railway Carmen, No. 542	14 00	.....	19	.....	50	.....	10	.....	60	.....	none	monthly
United Bro. of Carpenters and Joiners, No. 1,850	.....	.....	.....	.....	45	.....	9	.....	54	.....	.....	weekly
Bro. of Loco. Engineers, No. 679	32 76	32 76	39	39	60	60	12	12	72	72	none	monthly
Bro. of Railway Trainmen, No. 713	35 00	35 00	37	37	55	55	11	11	66	66	none	monthly
BROCKVILLE:												
Jour. Barbers' Int. Union, No. 387	12 00	.....	.....	.....	60	.....	15	.....	75	.....	none	weekly
Cigarmakers' Int. Union, No. 411	12 00	6 60	27	13	40	40	5	5	45	45	.....	weekly
Order of Railway Conductors, No. 366	15 00	15 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 69	17 00	17 00	20	20	.....	.....	.....	.....	.....	.....	.....	monthly
Bro. of Loco. Engineers, No. 118	mil'ge	basis	mil'ge	basis	50	50	10	10	60	60	.....	monthly
Int. Moulders' Union, No. 329	15 00	15 00	27	27	45	45	8	8	53	53	none	fortnightly
Jour. Tailors' Union of America, No. 262	10 00	8 00	17	14	45	45	9	9	54	54	30	weekly
Bro. of Railway Trainmen, No. 208	20 00	20 00	.....	.....	50	50	10	10	60	60	none	monthly
CARLETON PLACE:												
Bro. of Railway Carmen, No. 229	12 50	12 50	25	25	45	45	5	5	50	50	none	monthly
Int. Bro. Blacksmiths and Helpers, No. 424	16 00	.....	32	.....	45	.....	5	.....	50	.....	10	monthly
Int. Asso. of Machinists, No. 211	16 50	16 50	33	33	45	45	5	5	50	50	.....	monthly
Int. Moulders' Union, No. 362	16 50	16 50	29	29	47½	47½	9½	9½	57	57	.....	fortnightly
Metal Polishers, Buffers, etc., Int. Union, No. 96	20 00	20 00	33	33	50	50	10	10	60	60	.....	fortnightly
Stove Mounters' Int. Union, No. 78	18 00	18 00	30	30	50	50	10	10	60	60	.....	fortnightly
CHAPLEAU:												
Bro. of Railway Carmen, No. 378	17 00	.....	22	.....	50	.....	10	.....	60	.....	none	monthly
Order of Railway Conductors, No. 315	30 00	.....	37	.....	.....	.....	.....	.....	.....	.....	none	monthly
Bro. of Loco. Engineers, No. 319	mileag	e basis	.....	.....	.....	.....	.....	.....	.....	.....	none	monthly
Bro. of Loco. Firemen and Enginemen, No. 321	mileag	e basis	.....	.....	.....	.....	.....	.....	.....	.....	none	monthly
Int. Asso. of Machinists, No. 535	14 00	14 00	39	39	50	50	10	10	60	60	14	monthly
Bro. of Railway Trainmen, No. 246	18 00	18 00	24	24	.....	.....	.....	.....	.....	.....	.....	monthly

Table showing average wages and hours of labour, etc.—*Continued.*

Location and Title of Organization.	Average wages per week.		Average wages per hour.		Hours of labour first 5 days.		Hours on Saturday.		Total hours per week.		Average days idle.	Period of wage payments.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		
CHATHAM:	$ c.	$ c.	c.	c.								
American Federation of Musicians, No. 629	10 00	6 00	90	.....	20	.....	5	.....	25	.....	.....	weekly
Int. Typographical Union, No. 421	13 00	13 00	28	28	40	40	8	8	48	48	none	weekly
COBALT:												
Western Federation of Miners, No. 146	19 00	19 00	35	35	45	45	9	9	54	54	.....	monthly
Order of Railway Telegraphers, No. 99	19 00	19 00	24	24	60	60	12	12	72	72	none	monthly
COATSWORTH:												
Order of Railway Telegraphers, No. 43	15 00	15 00	21	21	60	60	12	12	72	72	none	monthly
COLLINGWOOD:												
Jour. Barbers' Int. Union, No. 528	12 00	12 00	20	20	50	50	16	16	66	66	none	weekly
Bricklayers' and Masons' Int. Union, No. 19	.....	.....	.....	.....	45	.....	9	.....	54	.....	175	fortnightly
Amal. Soc. of Carpenters and Joiners, No. —?	16 00	11 00	27½	18½	50	50	9	9	59	59	.....	fortnightly
Amal. Soc. of Engineers, No. 746	16 35	16 35	28	28	50	50	5	5	55	55	.....	.....
Labourers' Protective Union, No. 14,106	12 00	10 80	25	20	45	45	9	9	54	54	150	fortnightly
Int. Longshoremen's Asso., No. 476	.....	.....	30	.....	.....	.....	.....	.....	.....	.....	.....	.....
Int. Asso. of Machinists, No. 627	16 50	16 50	27½	27½	50	50	9	9	59	59	.....	fortnightly
CORDOVA:												
Western Federation of Miners, No. 147	14 25	.....	23½	.....	50	.....	9	.....	59	.....	.....	monthly
DESERONTO:												
Order of Railway Telegraphers, No. 43	10 00	10 00	14	14	60	60	12	12	72	72	.....	monthly
DUNDAS:												
Int. Moulders' Union, No. 269	17 50	allorg.	32½	.....	50	.....	5	.....	55	.....	none	fortnightly
ELK LAKE:												
Western Federation of Miners, No. 140	18 00	18 00	33¼	33¼	45	45	9	9	54	54	.....	monthly
FORT WILLIAM:												
Jour. Barbers' Int. Union, No. 549	18 00	18 00	30	30	40	40	11	11	51	51	none	weekly
Bartenders' Int. League, No. 761	18 00	allorg.	35	.....	35	.....	6	.....	41	.....	.....	monthly
Int. Bro. of Boilermakers, etc., No. 505	22 00	18 00	44	30	45	50	5	10	50	60	30	monthly
Bricklayers' and Masons' Int. Union, No. 25	18 00	allorg.	62½	.....	45	.....	9	.....	54	.....	140	fortnightly

Int. Asso. of Bridge Workers, etc., No. 53	23 00	18 90	50	35	45	45	9	9	54	54	200	fortnightly
Amal. Soc. of Carpenters and Joiners, No. 878	27 00	27 00	50	50	45	45	9	9	54	54	50	.....
Unit. Bro. of Carpenters and Joiners, No. 1,498	27 00	18 90	45	35	50	50	10	10	60	60	90	fortnightly
Order of Railway Conductors, No. 286	40 00	all org	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Bro. of Loco. Engineers, No. 243	35 00	35 00	50	50	mil'ge	basis	.....	.....	.....	.....	.....	monthly
Bro. of Loco. Engineers, No. 654	40 00	40 00	mil'ge	basis	.....	.....	.....	.....	.....	.....	.....	monthly
Int. Steam and Operating Engineers, No. 298	24 00	18 00	40	30	50	50	10	10	60	60	60	fortnightly
Bro. of Loco. Firemen and Enginemen, No. 225	20 00	20 00	25	25	mil'ge	basis	.....	.....	.....	.....	.....	monthly
Int. Longshoremen's Asso., No. 479 (Grain)	22 00	19 00	.....	.....	.....	.....	.....	.....	.....	.....	160	weekly
Int. Longshoremen's Asso., No. 746 (Coal)	22 50	22 50	37½	37½	50	50	10	10	60	60	.....	monthly
Int. Asso. of Machinists, No. 309	22 75	17 50	45½	35½	45	45	5	5	50	50	.....	monthly
Maintenance of Ways Employees, No. 128	13 50	.....	20½	.....	50	.....	10	.....	60	.....	.....	monthly
Int. Moulders' Union, No. 429	18 00	18 00	30	30	50	50	9	9	59	59	.....	fortnightly
Operative Plasterers' Int. Asso., No. 344	30 00	30 00	60	60	45	45	5	5	50	50	.....	fortnightly
Unit. Asso. of Plumbers, etc., No. 257	26 95	26 95	55	55	45	45	4	4	49	49	90	weekly
Bro. of Railway Trainmen, No. 306	45 00	45 00	41	41	mil'ge	basis	.....	.....	.....	.....	.....	monthly
Int. Typographical Union, No. 417	21 00	all org	44¾	.....	40	.....	8	.....	48	.....	none	weekly
GALT:												
Jour. Barbers' Int. Union, No. 413	14 00	.....	22	.....	50	.....	15	.....	65	.....	.....	weekly
Unit. Bro. Carpenters and Joiners, No. 1,216	17 50	13 75	35	25	50	50	5	5	55	55	60	weekly
Bricklayers, Masons and P. Union, No. 15	21 60	.....	45	.....	40	.....	8	.....	48	.....	125	weekly
Fed. Asso. of Letter Carriers, No. 39	13 50	13 50	.....	.....	40	40	8	8	48	48	.....	fortnightly
Int. Moulders' Union, No. 447	15 00	15 00	27	27	50	50	5	5	55	55	25	fortnightly
American Federation of Musicians, No. 124	16 10	all org	35	.....	35	.....	11	.....	46	.....	.....	.....
Bro. of Painters, Decorators, etc., No. 906	14 85	all org	27	.....	50	.....	5	.....	55	.....	.....	.....
GANANOQUE:												
Int. Union of Paving Cutters	18 00	all org	37½	.....	40	.....	8	.....	48	.....	.....	fortnightly
GRAHAM:												
Bro. of Railway Carmen, No. 28	18 00	18 00	28	28	50	50	10	10	60	60	none	monthly
GUELPH:												
Bakers and Confectioners (C.F.L.), No. 95	16 50	16 50	25	25	50	50	16	16	66	66	.....	weekly
Jour. Barbers' Int. Union, No. 310	12 00	all org	.....	.....	50	.....	13	.....	63	.....	none	weekly
Bartenders' Int. League, No. 104	17 00	13 00	24	18	60	60	10	10	70	70	none	monthly
Bricklayers, Masons and P. Union, No. 3	24 00	all org	50	.....	40	.....	8	.....	48	.....	100	weekly
Fed. Asso. of Letter Carriers, No. 18	13 50	all org	28	.....	40	.....	8	.....	48	.....	none	fortnightly
Metal Polishers, Buffers, etc., Int. Union, No. 56	19 00	19 00	35	35	50	50	9	9	59	59	none	weekly
Int. Moulders' Union, No. 212	18 00	.....	30	.....	47½	.....	8½	.....	56	.....	.....	weekly
Piano and Organ Workers' Union, No. 34	12 00	.....	22	.....	50	.....	5	.....	55	.....	.....	fortnightly
Int. Typographical Union, No. 391	15 00	all org	.....	.....	42	.....	6	.....	48	.....	none	weekly
HAMILTON:												
Jour. Barbers' Int. Union, No. 131	15 00	.....	24	.....	50	.....	13	.....	63	.....	none	weekly
Bartenders' Int. League, No. 197	15 00	10 00	25	17	49	49	11	11	60	60	none	weekly
Int. Bro. of Bookbinders, No. 114	16 50	.....	34⅓	.....	44	.....	4	.....	48	.....	none	weekly
Boot and Shoe Workers' Union, No. 228	Piece	work	.....	.....	50	.....	5	.....	55	.....	7	weekly

Table showing average wages and hours of labour, etc.—*Continued.*

Location and Title of Organization.	Average wages per week.		Average wages per hour.		Hours of labour first 5 days.		Hours on Saturday.		Total hours per week.		Average days idle.	Period of wage payments.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		
HAMILTON—Continued.	$ c.	$ c.	c.	c.								
Boot and Shoe Workers' Union, No. 232 (Cutters)	14 85	.....	27	.....	50	.....	5	.....	55	.....	8	weekly
Boot and Shoe Workers', No. 444 (Sole Leather)	12 00	6 60	22	12	50	50	5	5	55	55	none	weekly
Broom and Whisk Makers' Int. Union, No. 9	16 00	16 00	30	30	45	45	4½	4½	49½	49½	none	.....
Amal. Soc. of Carpenters and Joiners, No. 815	17 60	15 00	40	35	40	40	4	4	44	44	60	fortnightly
Unit. Bro. of Carpenters and Joiners, No. 18	17 60	17 60	40	40	40	40	4	4	44	44	50	fortnightly
Cigarmakers' Int. Union, No. 55	13 00	all org	.....	.....	40	.....	.....	.....	46	.....	10	weekly
American Bro. of Cement Workers, No. 170	20 00	15 75	45	35	40	40	5	5	45	45	.....	fortnightly
Order of Railway Conductors, No. 27	25 00	25 00	30	30	.....	.....	.....	.....	.....	.....	none	monthly
Int. Bro. of Electrical Workers, No. 390	20 00	all org	35	.....	50	.....	5	.....	55	.....	none	fortnightly
Bro. of Loco. Engineers, No. 133	32 00	.....	50	.....	50	.....	10	.....	60	.....	none	monthly
Can. Asso. of Stationary Engineers, No. 2	14 00	.....	25	.....	50	.....	10	.....	60	.....	none	weekly
Bro. of Loco. Firemen and Enginemen, No. 151	15 00	15 00	23	23	.....	.....	.....	.....	.....	.....	.....	monthly
United Garment Workers (Pressers), No. 196	15 00	all org	30	.....	45	.....	4	.....	49	.....	.....	weekly
United Garment Workers of America, No. 256	18 00	18 00	36	36	45	45	4	4	49	49	26	weekly
Int. Glass Workers' Asso., No. 33	15 00	all org	30	.....	45	.....	5	.....	50	.....	.....	weekly
Int. Asso. of Granite Cutters of America	16 50	13 20	37½	30	40	40	4	4	44	44	18	fortnightly
Int. Jour. Horseshoers, No. 72	17 00	13 75	30	25	50	50	5	5	55	55	.....	weekly
Federal Labour Union, No. 11 (City Firemen)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	fortnightly
Int. Longshoremen's Asso., No. 792	17 00	17 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Int. Moulders' Union, No. 26	16 60	.....	30	.....	50	.....	5	.....	55	.....	.....	weekly
American Federation of Musicians, No. 293	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bro. of Painters, Decorators, etc., No. 205	17 50	11 00	35	25	40	40	4	4	44	44	60	weekly
Pattern Makers' League of North America	18 00	all org	32½	.....	50	.....	5	.....	55	.....	.....	week. or fort.
Int. Union of Metal Buffers, etc., No. 26	16 50	16 50	30	30	50	50	5	5	55	55	.....	fortnightly.
Int. Printing Pressmen and Assistants, No. 176	16 00	.....	33⅓	.....	43½	.....	4½	.....	48	.....	none	weekly
Amal. Asso. of Sheet Metal Workers, No. 61	17 50	12 50	35	25	45	45	5	5	50	50	.....	weekly
Stove Mounters' Int. Union, No. 35	12 00	12 00	25	25	50	50	9	9	59	59	.....	fortnightly
Amal. Asso. of Street and Electric Ry. Em., No. 107	11 00	11 00	21	21	50	50	6½	6½	56½	56½	.....	fortnightly
Int. Stereotypers and Electrotypers, No. 113	19 00	all org	40	.....	40	.....	5	.....	45	.....	.....	weekly

Jour. Tailors' Union of America, No. 149	15 00	15 00	.....	.....	50	50	10	10	60	60	.....	wee
Order of Railway Telegraphers, No. 155	20 00	20 00	23	23	.....	.....	.....	.....	.....	.....	none	
Int. Alliance of Theatrical Stage Em., No. 129	15 00	15 00	35	35	34	34	6	6	40	40	.....	weekly
Tobacco Workers' Int. Union, No. 48		Piece work		.....	50	50	5	5	55	55	90	weekly
Bro. of Railway Trainmen, No. 226	25 00	25 00	38	38	mileage basis				.....	.....	.....	monthly
HAVELOCK:												
Order of Railway Conductors, No. 578	35 00	35 00	36	36	mileage basis				.....	.....	none	monthly
Bro. of Loco. Engineers, No. 658	30 00	all org	m	ileage basis			mileage basis		.....	.....	.....	monthly
Bro. of Railway Trainmen, No. 293	35 00	22 00	36	26	mileage		basis		.....	.....	none	monthly
HUMBERSTONE:												
Unit. Bro. of Carpenters and Joiners, No. 1,168	21 00	15 00	40	25	45	50	9	10	4	60	75	weekly
IGNACE:												
Bro. of Railway Carmen, No. 95	13 25	all org	26½	.....	45	.....	5	.....	50	.....	none	monthly
INGERSOLL:												
Maintenance of Ways Employees, No. 503	10 20	10 20	24	24	50	50	10	10	60	60	none	weekly
JACK FISH:												
Maintenance of Ways Employees, No. 231	11 40	10 20	19	17	50	50	10	10	60	60	.....	monthly
KENORA:												
Bro. of Loco. Engineers, No. 535	45 00	45 00	50	50	mileage		basis		.....	.....	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 305	25 00	25 00	.....	.....	60	60	12	12	72	72	.....	monthly
Int. Asso. of Machinists, No. 28	24 00	all org	45½	.....	45	.....	9	.....	54	.....	.....	monthly
Machinists' Helpers (A.F.L.), No. 12,806	14 00	14 00	27	27	45	45	9	9	54	54	none	monthly
Order of Railway Telegraphers, No. 7	20 00	20 00	30	30	55	55	11	11	65	65	none	monthly
Brotherhood of Railway Trainmen, No. 270	mileage		basis		mileage		basis		mileage		basis	.....	.....	monthly
KINGSTON:												
Jour. Barbers' Int. Union, No. 514	14 00	14 00	22	22	50	50	13	13	63	63	none	weekly
Bricklayers, Masons and P. Union, No. 10	24 00	19 20	55	40	40	40	8	8	48	48	100	fortnightly
Unit. Bro. of Carpenters and Joiners, No. 249	18 00	15 00	37½	25	40	50	8	10	48	60	30	fortnightly
National Asso. of Marine Engineers, No. 4	25 00	25 00	46½	46½	45	45	9	9	54	54	.....	weekly
Int. Building Labourers' Union, No. 66	13 44	12 00	28	25	40	40	8	8	48	48	140	fortnightly
Fed. Asso. of Letter Carriers, No. 8	15 00	all org	28	28	45	45	9	9	54	54	none	fortnightly
Int. Moulders' Union, No. 252	17 88	all org	36	.....	45	.....	5	.....	50	.....	none	weekly
Int. Bro. of Painters, Decorators, etc., No. 114	15 00	.....	27½	.....	45	.....	9	.....	54	.....	.....	weekly
Unit. Asso. of Plumbers, etc., No. 221	16 50	all org	34½	.....	40	.....	8	.....	48	.....	none	weekly
Jour. Stonecutters' Asso. of North America	24 00	all org	50	.....	40	.....	8	.....	48	.....	75	fortnightly
Jour. Tailors' Union of North America, No. 263	13 50	13 50	25	25	45	45	9	9	54	54	60	weekly
KINGSVILLE:												
Int. Union of Tobacco Workers, No. 71	8 50	all org	.....	.....	50	.....	8	.....	58	.....	.....	weekly
LINDSAY:												
Order of Railway Conductors, No. 322	25 00	25 00	40	40	50	50	10	10	60	60	.....	monthly
Bro. of Loco. Engineers, No. 174	30 00	30 00	.....	milage	basis	.....	.....	.....	.....	.....	none	monthly
Bro. of Railway Trainmen, No. 308	16 00	16 00	26	26	50	50	10	10	60	60	50	monthly
LONDON:												
Jour. Barbers' Int. Union, No. 366	12 00	10 00	22	15	43	48	12	12	55	60	.....	weekly
Bartenders' Int. League, No. 137	15 00	.....	.....	.....	45	.....	.....	8	.....	53	.....	

Table showing average wages and hours of Labour, etc.—*Continued.*

Location and Title of Organization.	Average wages per week.		Average wages per hour.		Hours of labour first 5 days.		Hours on Saturday.		Total hours per week.		Average days idle.	Period of wage payments.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		
LONDON—Continued.	$ c.	$ c.	c.	c.								
Int. Alliance of Billposters and Billers, No. 22	12 00	all org	25	.....	40	.....	8	.....	48	.....	none	weekly
Int. Bro. of Bookbinders, No. 206	14 00	.....	.....	.....	47½	.....	4½	52	.....	.....	.....	weekly
Boot and Shoe Workers' Union, No. 88	.....	all org	.....	.....	50	.....	5	.....	55	.....	.....	weekly
Bricklayers' and Masons' Int. Union, No. 5	22 00	19 50	50	45	40	40	4	4	44	44	130	weekly
United Brewery Workmen's Int. Union, No. 381	10 50	all org	.....	.....	47½	.....	6	.....	53½	.....	.....	weekly
Amal. Soc. of Carpenters and Joiners, No. 881	15 00	15 00	32	32	45	45	4½	4½	49½	49½	30	weekly
Unit. Bro. of Carpenters and Joiners, No. 1,946	17 50	12 50	35	25	45	45	5	5	50	50	.....	weekly
Cigarmakers' Int. Union, No. 278	14 00	12 00	31	27	40	40	4	4	44	44	12	weekly
Order of Railway Conductors, No. 16	30 00	.....	40	.....	50	.....	10	.....	60	.....	.....	monthly
Int. Bro. of Electrical Workers, No. 120	15 00	13 50	34	28	45	45	4	4	49	49	60	weekly
Bro. of Loco. Engineers, No. 68	25 00	25 00	.....	milage	basis	.....	.....	.....	.....	.....	.....	monthly
Amal. Soc. of Engineers, No. 709	15 70	14 50	26	.....	50	50	5	5	55	55	none	fortnightly
Can. Asso. of Stationary Engineers, No. 30	16 00	16 00	30	30	50	50	10	10	60	60	none	fortnightly
Bro. of Loco. Firemen and Enginemen, No. 117	16 00	all org	22½	.....	milage	basis	.....	.....	.....	.....	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 468	25 00	25 00	30	30	60	60	12	12	72	72	.....	monthly
United Garment Workers' Union, No. 33	12 00	9 50	.....	.....	45	45	4	4	49	49	20	weekly
Int. Asso. of Granite Cutters	19 50	19 50	37½	37½	40	40	4	4	44	44	none	fortnightly
Federal Labour Union, No. 5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	weekly
Fed. Asso. of Letter Carriers, No. 4	16 50	all org	.....	.....	.....	.....	.....	.....	.....	.....	none	fortnightly
Int. Alli. of Theatrical Stage Employees, No. 105	13 50	13 50	25	25	.....	.....	.....	.....	.....	.....	90	weekly
Maintenance of Ways Employees, No. 195	14 00	14 00	23	23	50	50	10	10	60	60	90	monthly
American Federation of Musicians, No. 279	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Int. Metal Polishers, Buffers, etc., No. 32	19 75	.....	35	.....	50	.....	8	.....	58	.....	18	weekly
Int. Printing Pressmen and Assistants, No. 173	20 00	.....	25	.....	44	50	4	10	48	60	.....	weekly
Jour. Stonecutters Asso. of North America	19 80	.....	45	.....	40	.....	4	.....	44	.....	90	weekly
Jour. Tailors' Union of North America, No. 30	15 00	.....	25	.....	.....	.....	.....	.....	.....	.....	.....	fortnightly
Order of Railway Telegraphers, No. 1	17 00	17 00	.....	.....	60	60	.....	.....	.....	.....	.....	monthly
Bro. of Railway Trainmen, No. 240	25 00	25 00	36	36	.....	milage	basis	.....	.....	.....	.....	monthly
Bro. of Railway Trainmen, No. 415	28 00	28 00	32	32	.....	milage	basis	.....	.....	.....	none	monthly

Int. Typographical Union, No. 133	16 00	.....	33¾	.....	40	.....	8	.....	48	.....	none	weekly
Stove Mounters' International Union, No. 33	.....	.....	.....	.....	30	.....	5	.....	35	.....	.....	.....
JERRITTON:												
Unit. Bro. of Carpenters and Joiners, No. 1,402	20 00	.....	40	.....	45	.....	5	.....	50	.....	40	weekly
MIDLAND:												
Int. Longshoremen's Asso., No. 189	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
MILVERTON:												
Int. Bro. of Maintenance of Ways Employees, No. 163	14 40	14 40	21	21	50	50	10	10	60	60	none	monthly
MIMICO:												
Bro. of Loco. Firemen and Enginemen, No. 756	.....	all org	.....	.....	65	.....	13	.....	78	.....	none	monthly
MUSKOKA:												
Int. Bro. of Maintenance of Ways Employees, No. 217	10 20	.....	17	.....	50	.....	10	.....	60	.....	none	.....
NIAGARA FALLS:												
Bricklayers, Masons and P. Int. Union, No. 27	30 00	all org	62½	.....	40	.....	8	.....	48	.....	.....	weekly
Amal. Soc. of Carpenters and Joiners, No. 889	19 20	.....	40	.....	40	.....	8	.....	48	.....	30	weekly
Unit. Bro. of Carpenters and Joiners, No. 713	17 00	12 00	40	25	40	40	8	8	48	48	50	weekly
Fed. Asso. of Letter Carriers, No. 36	12 00	all org	.....	.....	45	.....	9	.....	54	.....	none	fortnightly
Jour. Stonecutters' Asso. of North America	27 00	all org	56¼	.....	40	.....	8	.....	48	.....	90	fortnightly
Bro. of Railway Trainmen, No. 379	20 00	.....	.....	.....	50	.....	10	.....	60	.....	.....	monthly
NORTH BAY:												
Bricklayers', Masons' and P. Union, No. 29	27 00	24 00	50	40	45	50	9	10	54	60	120	fortnightly
Bro. of Railway Carmen, No. 192	11 50	11 50	23	23	45	45	5	5	50	50	none	monthly
Order of Railway Conductors, No. 242	35 00	35 00	.....	milage	basis	.....	.....	.....	.....	.....	none	monthly
Bro. of Loco. Engineers, No. 308	.....	milage	basis	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Maintenance of Ways Employees, No. 244	10 50	10 50	17½	17½	50	50	10	10	60	60	none	monthly
Bro. of Railway Trainmen, No. 249	36 00	36 00	.....	milage	basis	.....	.....	.....	.....	.....	none	monthly
OAKVILLE:												
Amal. Soc. of Carpenters and Joiners	19 25	17 70	35	30	50	50	9	9	59	59	.....	fortnightly
ORANGEVILLE:												
Maintenance of Ways Employees, No. 214	10 20	10 20	17	17	50	50	10	10	60	60	none	monthly
ORILLIA:												
Bricklayers', Masons' and P. Int. Union, No. 18	24 30	.....	45	.....	45	.....	9	.....	54	.....	180	weekly
OSHAWA:												
Bricklayers', Masons' and P. Int. Union, No. 20	24 00	.....	40	.....	50	.....	9	.....	59	.....	.....	weekly
Amal. Soc. of Carpenters and Joiners, No. 891	13 75	.....	25	.....	50	.....	5	.....	55	.....	.....	weekly
Int. Moulders' Union, No. 136	15 00	15 00	25	25	50	50	9	9	59	59	none	weekly
OTTAWA:												
Bricklawers' Int. Union, No. 7 (Stone Masons)	13 25	.....	52	40	40	40	4	4	44	44	145	fortnightly
Bricklayers', Masons' and P. Int. Union, No. 14	24 20	17 60	55	40	40	45	4	4	44	49	104	fortnightly
Int. Bro. of Blacksmiths and Helpers, No. 446	14 00	.....	28	.....	45	.....	5	.....	50	.....	.....	monthly
Int. Bro. of Bookbinders, No. 173	18 00	.....	37½	.....	43¾	.....	4¼	.....	48	.....	none	weekly
Amal. Soc. of Carpenters and Joiners, No. 892	19 00	19 00	38	38	45	45	5	5	50	50	.....	fortnightly
Unit. Bro. of Carpenters and Joiners, No. 93	17 50	.....	35	.....	45	.....	5	.....	50	.....	35	weekly
Bro. of Railway Carmen, No. 230	11 00	11 00	22	22	45	45	5	5	50	50	.....	monthly
Order of Railway Conductors, No. 29	.....	.....	mil'ge	basis	.....	.....	.....	.....	.....	.....	.....	monthly

Table showing average wages and hours of Labour, etc.—*Continued.*

Location and Title of Organization.	Average wages per week.		Average wages per hour.		Hours of labour first 5 days.		Hours on Saturday.		Total hours per week.		Average days idle.	Period of wage payments.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		
OTTAWA.—Continued.	$ c.	$ c.	c.	c.								
Bro. of Loco. Engineers, No. 168	35 00	35 00	mile.	basis	.....	.....	.....	.....	.....	.....	.....	monthly
Bro. of Loco. Engineers, No. 469	.....	.....	mile.	basis	.....	.....	.....	.....	.....	.....	.....	monthly
Stationary and Operating Engineers, No. 473	15 00	15 00	25	25	50	50	9	9	59	59	52	fortnightly
Bro. of Loco. Firemen and Engineers, No. 81	.....	all org	.....	.....	mile.	basis	.....	.....	.....	.....	.....	monthly
Int. Asso. of Machinists, No. 412	16 67	all org	33⅓	.....	45	.....	5	.....	50	.....	none	fortnightly
Maintenance of Ways Employees, No. 223	10 20	10 20	17	17	50	50	10	10	60	60	none	monthly
Int. Moulders' Union, No. 280	17 10	.....	31⅔	.....	45	.....	9	.....	54	.....	.....	fortnightly
American Federation of Musicians, No. 180	25 00	25 00	.....	.....	30	.....	6	.....	36	.....	.....	.....
Int. Bro. of Painters and Decorators, No. 200	16 80	13 50	37½	27	45	45	5	5	50	50	12	fortnightly
Int. Bro. of Papermakers, No. 34	18 62	.....	38	.....	40	.....	8	.....	48	.....	none	fortnightly
Operative Plasterers' Int. Asso., No. 124	23 50	15 00	45	30	45	45	5	5	50	50	70	fortnightly
Int. Plasterers' Labourers' Union, No. 1	15 00	10 00	30	20	45	45	5	5	50	50	50	fortnightly
Unit. Asso. of Jour. Plumbers, No. 71	20 00	.....	41	.....	40	.....	5	.....	45	.....	.....	weekly
Int. Pressfeeders' and Assistants' Union, No. 9	12 70	.....	25	.....	43	.....	5	.....	48	.....	.....	fortnightly
Int. Printing Pressmen's Union, No. 5	19 00	all org	39¾	.....	42½	.....	5	.....	47½	.....	none	week. or fort.
Amal. Sheet Metal Workers, No. 47	18 50	18 50	37½	37½	45	45	5	5	50	50	none	weekly
Amal. Asso. Street and Electric Ry. Em., No. 279	15 00	15 00	25	25	50	50	10	10	60	60	.....	fortnightly
Int. Alli. Theatrical Stage Employees, No. 95	18 00	all org	30	.....	45	.....	6	.....	51	.....	.....	weekly
Int. Steel and Copper Plate Printers, No. 6	.....	all org	.....	.....	42½	.....	4½	.....	47	.....	.....	weekly
Jour. Stonecutters' Asso. of North America	20 68	all org	47	.....	40	.....	4	.....	44	.....	104	fortnightly
Jour. Tailors' Union of America, No. 143	13 00	.....	24	.....	45	.....	9	.....	54	.....	50	weekly
Bro. of Railway Trainmen, No. 185	.....	.....	mile.	basis	.....	.....	.....	.....	.....	.....	.....	monthly
Int. Typographical Union, No. 102	19 00	19 00	39	39	43	43	5	5	48	48	none	fortnightly
National Typographical Union, No. 1	20 00	20 00	41	41	42½	42½	5	5	47½	47½	none	fortnightly
OWEN SOUND:												
Bricklayers', Masons and P. Union, No. 11	27 00	.....	50	.....	45	.....	9	.....	54	.....	.....	fortnightly
Unit. Bro. of Carpenters and Joiners, No. 1,353	18 90	.....	35	.....	45	.....	9	.....	54	.....	40	weekly
Can. Asso. of Stationary Engineers, No. 25	15 00	15 00	25	25	50	50	10	10	60	60	96	fortnightly
Int. Moulders' Union, No. 413	22 00	22 00	40	40	50	50	10	10	60	60	.....	fortnightly

Jour. Stonecutters' Asso. of North America	21 60	.....	45	.....	40	.....	8	.....	48	.....	.....	weekly
PALMERSTON:												
Order of Railway Conductors, No. 492	28 00	28 00	48	48	50	50	10	10	60	60	none	monthly
Bro. of Loco. Firemen and Enginemen, No. 181	17 00	17 00	25	25	milag	e basis	.....	.....	.....	.....	.....	monthly
PARRY SOUND:												
Int. Asso. of Machinists, No. 518	19 00	19 00	33	33	50	50	9	9	59	59	15	monthly
Maintenance of Ways Employees, No. 447	12 00	all org	20	.....	50	50	10	10	60	60	.....	monthly
PEMBROKE:												
Maintenance of Ways Employees, No. 221	10 20	9 95	17½	.....	50	.....	10	.....	60	.....	none	monthly
PETERBOROUGH:												
Jour. Barbers' Int. Union, No. 402	13 00	all org	21	.....	50	.....	14	.....	64	.....	.....	weekly
Bartenders' Union, No. 293	.....	all org	.....	.....	40	.....	10	.....	50	.....	.....	weekly
Bricklayers' and Masons' Int. Union, No. 17	21 60	.....	45	.....	40	.....	8	.....	48	.....	.....	fortnightly
Unit. Bro. of Carpenters and Joiners, No. 672	15 00	13 60	27½	25½	45	45	9	9	54	54	60	weekly
Int. Bro. of Electrical Workers, No. 261	17 00	17 00	30	30	50	50	5	5	55	55	none	fortnightly
Fed. Asso. of Letter Carriers, No. 22	13 40	all org	.....	.....	.....	.....	.....	.....	.....	.....	none	fortnightly
Maintenance of Ways Employees, No. 211	11 40	all org	17	.....	50	.....	10	.....	60	.....	none	monthly
Int. Moulders' Union, No. 191	17 50	all org	32	.....	45	.....	9	.....	54	.....	.....	weekly
Patternmakers' League of North America	19 25	.....	35	.....	50	.....	5	.....	55	.....	12	fortnightly
Jour. Tailors' Union of America, No. 23	20 00	all org	25	.....	60	.....	14	.....	74	.....	36	weekly
United Textile Workers, No. 663 (Carpet Weavers)	15 00	.....	30	.....	50	.....	5	.....	55	.....	30	fortnightly
Int. Typographical Union, No. 248	17 00	.....	.....	.....	40	.....	8	.....	48	.....	.....	.....
PORCUPINE:												
Western Federation of Miners, No. 145	.....	.....	.....	.....	45	.....	9	.....	54	.....	.....	fort. or mont.
PORT ARTHUR:												
Bartenders' Int. League, No. 757	18 75	all org	43	.....	37½	.....	5½	.....	43	.....	.....	monthly
Amal. Soc. of Carpenters and Joiners, No. 893	25 00	.....	50	.....	45	.....	5	.....	50	.....	100	fortnightly
Unit. Bro. of Carpenters and Joiners, No. 285	27 00	.....	50	.....	45	.....	5	.....	55	.....	60	fortnightly
Bro. of Railway Carmen, No. 347	15 00	15 00	30	30	47½	47½	5	5	52½	52½	.....	monthly
Order of Railway Conductors, No. 536	.....	.....	41	.....	mile.	basis	.....	.....	.....	.....	.....	monthly
Int. Bro. of Electrical Workers, No. 367	21 00	.....	39	.....	50	.....	5	.....	55	.....	none	fortnightly
Can. Asso. of Stationary Engineers, No. 29	20 00	20 00	33⅓	33⅓	50	50	10	10	60	60	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 593	25 00	.....	.....	.....	mile.	basis	.....	.....	.....	.....	.....	mouthly
Int. Longshoremen's Asso., No. 319 (Coal)	15 00	15 00	30	30	.....	.....	.....	.....	.....	.....	130	monthly
Int. Asso. of Machinists, No. 820	20 00	20 00	35	35	47½	47½	5	5	52½	52½	none	weekly
Int. Bro. Steam Shovel and Dredgemen, No. 9	18 00	18 00	.....	.....	60	60	12	12	72	72	90	monthly
Jour. Stonecutters' Asso. of North America	26 40	all org	60	.....	40	.....	4	.....	44	.....	.....	fortnightly
Int. Typographical Union, No. 575	23 00	all org	47	.....	43	.....	5	.....	48	.....	.....	fortnightly
PORT HOPE:												
Int. Moulders' Union, No. 189	24 00	all org	45	.....	50	.....	10	.....	60	.....	40	fortnightly
PRESTON:												
Int. Moulders' Union, No. 314	20 00	.....	35½	.....	50	.....	9	.....	59	.....	.....	.....
Int. Metal Polishers, Buffers, etc., No. 27	20 00	all org	34½	.....	50	.....	9	.....	59	.....	.....	weekly
Stove Mounters' Int. Union, No. 11	15 00	all org	25	.....	50	.....	5	.....	55	.....	40	weekly

Table showing average wages and hours of Labour, etc.—*Continued*.

Location and Title of Organization.	Average wages per week.		Average wages per hour.		Hours of labour first 5 days.		Hours on Saturday.		Total hours per week.		Average days idle.	Period of wage payments.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		
RAINY RIVER:	$ c	$ c.	c.	c.								
Brg. of Railway Carmen, No. 436	14 00	all org	26	.....	50	.....	5	.....	55	.....	15	monthly
Order of Railway Conductors, No. 30	40 00	40 00	46	46	milage	basis	.....	.....	.....	.....	.....	monthly
Can. Bro. of Railway Employees, No. 51	12 50	12 50	19	19	55	55	11	11	66	66	none	monthly
Bro. of Loco. Engineers, No. 749	30 00	30 00	50	50	milage	basis	.....	.....	.....	.....	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 750	30 00	30 00	.....	.....	milage	basis	.....	.....	.....	.....	.....	monthly
Bro. of Railway Trainmen, No. 828	25 00	25 00	42	42	50	50	10	10	60	60	.....	monthly
ST. CATHARINES:												
Barbers' Union, No. 1	13 00	.....	17½	.....	60	.....	16	.....	76	.....	.....	weekly
Int. Brewery Workmen, No. 305	11 00	11 00	20	20	45	45	9	9	54	54	.....	weekly
Bricklayers', Masons' and P. Union, No. 4	17 50	.....	50	.....	45	.....	5	.....	50	.....	90	weekly
Amal. Soc. of Carpenters and Joiners, No. 895	15 00	15 00	40	40	45	45	5	5	50	50	40	fortnightly
Unit. Bro. of Carpenters and Joiners, No. 38	18 00	15 00	40	30	45	45	5	5	50	50	20	weekly
Cigarmakers' Int. Union, No. 140	14 00	all org	29½	.....	40	.....	8	.....	48	.....	none	weekly
Int. Bro. of Electrical Workers, No. 303	10 75	.....	27	.....	40	.....	4	.....	44	.....	50	weekly
Fed. Asso. of Letter Carriers, No. 17	13 50	13 50	25	25	45	45	9	9	54	54	.....	.....
Int. Asso. of Machinists, No. 268	16 00	all org	27½	.....	50	.....	5	.....	55	.....	.....	fortnightly
Int. Moulders' Union, No. 385	18 00	18 00	30	30	50	50	10	10	60	60	.....	weekly
Bro. of Painters, Decorators, etc., No. 407	17 50	15 00	35	30	45	45	5	5	50	50	80	weekly
Metal Polishers, Buffers, etc., Union, No. 97	16 50	16 50	28½	28½	50	50	8	8	58	58	30	fortnightly
Jour. Tailors' Union of America, No. 235	12 00	all org	25	.....	50	.....	10	.....	60	.....	60	weekly
Int. Typographical Union, No. 416	16 00	all org	33¼	.....	42½	.....	5½	.....	48	.....	.....	weekly
ST. MARY'S:												
Jour. Stonecutters' Asso. of North America	21 60	all org	45	.....	40	.....	8	.....	48	.....	.....	weekly
ST. THOMAS:												
Jour. Barbers' Int. Union, No. 222	15 00	11 00	25	18	50	50	13	13	63	63	none	weekly
Can. Blacksmiths and Helpers' Union, No. 94	17 25	all org	32	.....	45	.....	9	.....	45	.....	.....	.....
Bro. of Boilermakers, etc., No. 413	18 00	.....	34	.....	45	.....	9	.....	54	.....	none	monthly
Bricklayers' and Masons' Int. Union, No. 8	18 00	.....	42	.....	45	.....	9	.....	54	.....	.....	fortnightly
Unit. Bro. of Carpenters and Joiners, No. 1,798	15 00	15 00	25	25	50	50	10	10	60	60	60	fortnightly

Cigarmakers' Int. Union, No. 420	11 00	7 00	24	15	40	40	5	5	45	45	.....	.....
Order of Railway Conductors, No. 13	30 00	all org	36	milage	basis	.....	.....	.....	.....	.....	.....	monthly
Bro. of Loco. Engineers, No. 132	30 00	all org	45	.....	50	.....	10	.....	60	.....	.....	monthly
Bro. of Loco. Eigineers, No. 529	32 00	.....	38	.....	50	.....	10	.....	60	.....	.....	monthly
Bro. of Loco. Engineers, No. 661	32 00	.....	38	.....	milage	basis	.....	.....	.....	.....	.....	monthly
Amal. Soc. of Engineers, No. 754	17 50	17 50	35½	35½	45	45	5	5	50	50	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 5	milage	basis	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Fed. Asso. of Letter Carriers, No. 23	15 00	15 00	31	31	40	40	8	8	48	48	.....	fortnightly
Int. Asso. of Machinists, No. 294	18 00	15 00	35½	25	45	50	9	10	54	60	.....	monthly
Int. Asso. of Machinists' Helpers, etc., No. 946	11 80	11 80	22	22	45	45	9	9	54	54	.....	monthly
Int. Asso. Steamfitters, etc., No. 107	17 00	17 00	27½	27½	50	50	10	10	60	60	15	monthly
Bro. of Railway Signalmen, No. 27	20 00	20 00	33	33	50	50	10	10	60	60	none	monthly
Jour. Tailors' Union of America, No. 141	12 00	10 00	20	17	50	50	10	10	60	60	60	.....
Bro. of Railway Trainmen, No. 47	.....	milage	basis	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Int. Typographical Union, No. 459	18 00	18 00	33½	33½	44	44	4	4	48	48	none	.....
SARNIA:												
Jour. Barbers' Int. Union, No. 467	15 00	15 00	24	.....	50	60	13	13	63	73	none	weekly
Bricklayers', Masons' and P. Union, No. 23	24 75	all org	55	.....	45	.....	9	.....	54	.....	90	weekly
Order of Railway Conductors, No. 189	30 00	.....	milage	basis	.....	.....	.....	.....	.....	.....	none	monthly
Bro. of Loco. Engineers, No. 240	35 00	.....	milage	basis	.....	.....	.....	.....	.....	.....	.....	monthly
Int. Longshoremen's Asso., No. 253	15 00	.....	35	25	50	50	10	10	60	60	120	.....
Bro. of Railway Trainmen, No. 227	.....	.....	milage	basis	.....	.....	.....	.....	.....	.....	.....	monthly
SAULT STE. MARIE:												
Amal. Soc. of Carpenters and Joiners, No. 869	21 00	21 00	35	35	50	50	10	10	60	60	50	.....
Order of Railway Conductors, No. 429	31 85	all org	35	.....	65	.....	13	.....	78	.....	.....	monthly
Bro. of Loco. Engineers, No. 67	25 00	all org	37	.....	60	.....	12	.....	72	.....	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 606	.....	.....	milage	basis	.....	.....	.....	.....	.....	.....	.....	monthly
Int. Asso. of Machinists, No. 485	22 50	.....	37½	.....	51	.....	9	.....	60	.....	.....	monthly
Int. Moulders' Union, No. 391	21 00	21 00	35	35	50	50	10	10	60	60	.....	monthly
Int. Bro. of Papermakers, No. 133	16 85	all org	34⅛	.....	40	.....	8	.....	48	.....	none	monthly
Unit. Asso. of Plumbers, etc., No. 414	22 50	17 50	45	35	45	45	5	5	50	50	.....	.....
Int. Wood, Wire and Metal Lathers, No. 191	24 00	24 00	40	40	50	50	10	10	60	60	60	fortnightly
SCHREIBER:												
Bro. of Loco. Firemen and Enginemen, No. 387	milage	basis	.....	.....	50	50	10	10	60	60	.....	monthly
Int. Machinists' Helpers, No. 927	13 30	13 30	19	19	50	50	10	10	60	60	none	monthly
Bro. of Railway Trainmen, No. 419	25 00	25 00	milage	basis	.....	milage	basis	.....	.....	.....	.....	monthly
SILVER CENTRE:												
Western Federation of Miners, No. 148	18 00	18 00	35	35	45	45	9	9	54	54	100	monthly
SMITH'S FALLS:												
Bricklayers', Masons' and P. Union, No. 21	24 30	all org	45	.....	45	.....	9	.....	54	.....	100	fortnightly
Bro. of Loco. Engineers, No. 381	40 00	40 00	40	40	.....	milage	basis	.....	.....	.....	.....	monthly
Maintenance of Ways Employees, No. 136	11 50	11 50	19	19	50	50	10	10	60	60	none	monthly
Int. Moulders' Union, No. 201	18 00	.....	30	25	50	50	10	10	60	60	.....	fortnightly
Bro. of Railway Trainmen, No. 245	milage	basis	.....	.....	milage	basis	.....	.....	.....	.....	.....	monthly
Bro. of Railway Trainmen, No. 527	22 00	22 00	24	24	milage	basis	.....	.....	.....	.....	none	monthly

Table showing average wages and hours of Labour, etc.—*Continued.*

Location and Title of Organization.	Average wages per week.		Average wages per hour.		Hours of labour first 5 days.		Hours on Saturday.		Total hours per week.		Average days idle.	Period of wage payments.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		
STRATFORD:	$ c.	$ c.	c.	c.								
Jour. Barbers' Int. Union, No. 136	13 00	.....	.....	.....	55	.....	14	.....	69	.....	.....	weekly
Bro. of Boilermakers, etc., No. 3	13 75	13 75	25	25	50	50	5	5	55	55	none	monthly
Bricklayers', Masons' and P. Union, No. 24	24 00	15 00	45	25	45	50	9	10	54	60	150	weekly
Cigarmakers' Int. Union, No. 424	15 00	all org	27	.....	40	.....	8	.....	48	.....	.....	.....
Order of Railway Conductors, No. 15	milage	basis	.....	.....	milage	basis	.....	.....	.....	.....	.....	monthly
Bro. of Loco. Engineers, No. 188	30 00	30 00	milage	basis	.....	milage	.....	.....	.....	.....	.....	monthly
Amal. Soc. of Engineers, No. 579	15 50	.....	27	.....	50	.....	5	.....	55	.....	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 38	milage	bas	milage	basis	.....	.....	.....	.....	.....	.....	.....	monthly
Int. Asso. of Machinists, No. 103	30 00	9 00	28	18	45	45	5	5	50	50	none	monthly
Int. Typographical Union, No. 139	15 00	.....	27	.....	40	.....	4	.....	44	.....	none	weekly
SUDBURY:												
Bartenders' Int. League, No. 237	15 00	12 00	25	17	50	50	13	13	63	63	none	monthly
Amal. Soc. of Carpenters and Joiners, No. 9	18 00	.....	30	.....	50	.....	8	.....	58	.....	.....	fortnightly
THOROLD:												
United Bro. of Carpenters and Joiners, No. 1,677	20 65	15 00	45	30	45	45	5	5	50	50	60	weekly
TORONTO:												
Int. Bakers and Confectionery Workers, No. 181	18 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	weekly
Jour. Barbers' Int. Union, No. 517	13 00	12 00	20	17	47	52	13	13	60	63	30	weekly
Int. Alli. of Billposters and Billers, No. 40	16 00	12 00	.....	.....	47½	47½	5	5	52½	52½	none	weekly
Int. Bro. of Boilermakers, etc., No. 548	16 00	16 00	32	32	45	45	5	5	50	50	none	fort or mont.
Int. Bro. of Bookbinders, No. 28	17 50	.....	36½	.....	43¾	.....	4¼	.....	48	.....	none	weekly
Can. Nat. Bookbinders' Union, No. 1	18 00	18 00	37½	37½	43¾	43¾	4¼	4¼	48	48	none	weekly
Boot and Shoe Workers' Int. Union, No. 233	15 00	12 75	30	25	45	45	5	5	50	50	30	weekly
Int. Brewery Workers' Union, No. 304	13 00	all org	26	.....	45	.....	5	.....	50	50	.....	weekly
Int. Brewery Workers' Union, No. 317	13 50	all org	22½	.....	50	.....	10	.....	60	.....	.....	weekly
Bricklayers' Int. Union, No. 2	24 20	.....	55	.....	40	.....	4	.....	44	.....	50	fortnightly
Bricklayers', Masons' and P. Union, No. 26	23 00	.....	52½	.....	40	.....	4	.....	44	.....	90	fortnightly
Broom and Whiskmakers' Int. Union, No. 55	12 00	12 00	22	22	42½	42½	4½	4½	47	47	.....	weekly
Bro. of Railway Carmen, No. 258	15 00	15 00	28	28	45	45	5	5	50	50	.....	monthly

Bro. of Railway Carmen, No. 511	14 00	14 00	21	21	50	50	10	10	60	60	.....	monthly
Amal. Soc. Carpenters and Joiners (1st Branch), No. 798	17 60	16 20	40	30	40	50	4	4	44	54	30	fortnightly
Amal. Soc. Carpenters and Joiners (2nd Branch), No.902.	17 60	16 20	40	30	40	50	4	4	44	54	8	fortnightly
Amal. Soc. Carpenters and Joiners (3rd Branch), No. 903	17 60	16 20	40	30	40	50	4	4	44	54	25	fortnightly
Amal. Soc. Carpenters and Joiners (4th Branch), No. 801	17 60	16 20	40	30	40	50	4	4	44	54	.....	fortnightly
Amal. Soc. Carpenters and Joiners (5th Branch), No. 867	17 60	16 20	40	30	40	50	4	4	44	54	50	fortnightly
Amal. Soc. Carpenters and Joiners (6th Branch), No. 906	17 60	16 20	40	30	40	50	4	4	44	54	30	fortnightly
Amal. Soc. Carpenters and Joiners (7th Branch)	17 60	16 20	40	30	40	50	4	4	44	54	28	fortnightly
Unit. Bro. Carpenters and Joiners, No. 1,553	19 80	16 20	45	30	40	50	4	4	44	54	39	fortnightly
Unit. Soc. Carpenters and Joiners, No. 1,820	16 25	11 00	32½	20	45	50	5	5	50	55	.....	fortnightly
Cigarmakers' Int. Union, No. 27	15 00	all org	.....	.....	40	.....	4	.....	44	.....	.....	weekly
Order of Railway Conductors, No. 345	30 00	milage	basis	.....	.....	milage	basis	.....	.....	.....	.....	monthly
Order of Railway Conductors, No. 531	15 00	milage	basis	.....	.....	milage	basis	.....	.....	.....	.....	monthly
Int. Bro. of Electrical Workers, No. 114	18 00	18 00	40	.....	40	60	4	4	44	64	60	fortnightly
Int. Bro. of Electrical Workers, No. 353	13 50	11 70	25	23	45	45	5	5	50	50	50	fortnightly
Hoisting and Portable Engineers, No. 356	24 00	15 00	40	30	50	50	5	5	55	55	.....	fortnightly
Bro. of Loco. Engineers, No. 295	25 00	25 00	milage	basis	.....	milage	basis	.....	.....	.....	.....	monthly
Int. Union of Steam Engineers, No. 152	15 00	.....	35	.....	50	.....	5	.....	55	.....	.....	weekly
Bro. of Loco. Firemen and Enginemen, No. 67	.....	.....	milage	basis	.....	milage	basis	.....	.....	.....	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 262	30 00	30 00	milage	basis	.....	milage	basis	.....	.....	.....	.....	monthly
Bro. of Loco. Firemen and Enginemen, No. 596	20 00	20 00	22	22	.....	milage	basis	.....	.....	.....	.....	monthly
Int. Bro. of Stationary Firemen, No. 300	14 00	14 00	25	25	45	45	9	9	54	54	.....	fort or month
Fur Workers' Union, No. 14,187	15 00	.....	30	.....	45	.....	4	.....	44	.....	40	weekly
Int. Garment Workers' Union, No. 14 (Ladies)	.....	.....	.....	.....	45	.....	4	.....	49	.....	.....	weekly
Unit. Garment Workers, No. 185 (Cutters)	19 00	15 00	38	28	45	48	4	4	49	52	14	weekly
Unit. Garment Workers of America, No. 202	10 00	.....	21	.....	44	.....	4	.....	48	.....	.....	weekly
Gilders' and Finishers' Union, No. 636	13 50	13 50	27	27	45	45	5	5	50	50	.....	fortnightly
American Flint Glass Workers, No. 45	.....	all org	.....	.....	45	.....	4½	.....	49½	.....	.....	weekly
Int. Glass Workers' Asso., No. 66	piece	work	.....	.....	42½	.....	7½	.....	50	.....	90	fortnightly
Int. Glass Workers' Asso., No. 21	16 00	16 00	32	32	45	45	5	5	50	50	.....	weekly
Int. Asso. of Lithographers, No. 12	25 00	.....	52	.....	43¾	.....	4½	.....	48	.....	none	weekly
Int. Longshoremen's Asso., No. 646	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Int. Asso. of Machinists, No. 235	21 00	21 00	40	40	45	50	5	10	50	60	.....	weekly
Mailers' Union (I.T.U.), No. 5	17 00	16 00	.....	.....	35	.....	5	.....	40	.....	none	weekly
Maintenance of Ways Employees, No. 419	10 80	all org	.....	.....	50	.....	10	.....	60	.....	none	monthly
Int. Asso. of Marble Workers, No. 12	15 00	.....	32½	.....	45	.....	4½	.....	49½	.....	.....	fortnightly
Int. Asso. of Marble Workers, No. 99	24 50	all org	56¼	.....	40	.....	4	.....	44	.....	none	fortnightly
Int. Asso. of Marble Workers, No. 100	14 00	11 00	32	25	40	40	4	4	44	44	.....	fortnightly
Int. Moulders' Union, No. 28	17 00	17 00	34	34	45	50	5	10	50	60	12	fortnightly
Int. Moulders' Union, No. 207 (Brass)	17 50	12 00	32	26	45	45	5	5	50	50	none	weekly
American Federation of Musicians, No. 149	20 00	16 00	.....	.....	.....	.....	.....	.....	.....	.....	40	weekly
Bro. of Painters, Decorators, etc., No. 3	15 40	.....	35	.....	40	.....	4	.....	44	.....	30	fortnightly
Bro. of Painters, Decorators, etc., No. 219	15 00	.....	35	.....	40	.....	4	.....	44	.....	.....	fortnightly
Bro. of Painters, etc., No. 737 (Sign Writers)	15 00	.....	35	.....	40	.....	4	.....	44	.....	.....	fortnightly

Table showing average wages and hours of labour, etc.—*Continued.*

Locality and Title of Organization.	Average wages per week.		Average wages per hour.		Hours of labour first 5 days.		Hours on Saturday.		Total hours per week.		Average idle days.	Period of wage payments.
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		
Toronto.—*Continued.*	$ c.	$ c.	c.	c.								
Patternmakers' League of North America	20 00	14 75	37½	30	45	45	4½	4½	49½	49½	.....	weekly
Int. Photo Engravers' Union, No. 35	20 00	13 00	43	25	42½	42½	4	4	46½	46½	none	weekly
Operative Plasterers' Int. Union, No. 48	18 00	.....	50	40	40	40	4	4	44	44	90	fortnightly
Unit. Asso. of Plumbers, etc., No. 46	.....	.....	.....	.....	40	.....	4	.....	44	.....	.....	weekly
Webb Pressmen's Union, No. 1	20 00	all org	41	.....	40	.....	8	.....	48	.....	none	weekly
Printing Press Assistants, etc., Union, No. 1	13 35	.....	.....	.....	43¾	.....	4¼	.....	48	.....	.....	weekly
Printing Pressmen's Union, No. 10 (C.F.L.)	20 00	20 00	43	43	43¾	43¾	4¼	4¼	48	48	none	weekly
Int. Slate and Tile Roofers, No. 39	19 80	.....	45	.....	40	.....	8	.....	48	.....	.....	wk. or fort.
Int. Asso. of Steamfitters, No. 78	19 80	15 40	45	35	40	40	4	4	44	44	30	wk. or fort.
Amal. Sheet Metal Workers' Int. Alli., No. 30	16 50	.....	32	.....	40	.....	4	.....	44	.....	.....	weekly
Int. Bro. of Steam Shovel and Dredgemen, No. 46	37 50	.....	60	.....	50	.....	10	.....	60	.....	60	wk. or mont.
Jour. Stonecutters' Asso. of North America	23 00	.....	52½	.....	40	.....	4	.....	44	.....	90	fortnightly
Amal. Asso. St. and Electrical Ry. Em., No. 113	15 25	15 25	26	26	50	50	10	10	60	60	none	fortnightly
Jour. Tailors' Union of America, No. 132	14 00	less	29	less	45	.....	4	.....	49	.....	30	weekly
Jour. Tailors' Union of America, No. 156	13 00	.....	21	.....	50	.....	10	.....	60	.....	100	fortnightly
Int. Tilesetters' and Helpers' Union, No. 37	19 00	.....	45	.....	40	.....	4	.....	44	.....	.....	fortnightly
Int. Bro. of Teamsters, No. 457 (Coal Drivers)	13 00	10 00	22	.....	50	50	10	10	60	60	none	weekly
Commercial Telegraphers Union of America, No. 1	25 00	.....	.....	.....	45	.....	9	.....	54	.....	.....	monthly
Int. Alli. Theatrical Stage Employees, No. 58	12 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	75	weekly
Int. Alli. Theatrical Stage Employees, No. 173	20 00	12 00	50	27	35	35	8	8	43	43	none	weekly
Tobacco Workers' Int. Union, No. 63	10 00	.....	.....	.....	45	.....	5	.....	50	.....	.....	weekly
Bro. of Railway Trainmen, No. 255	35 00	.....	39	.....	varies	.....	.....	varies	.....	.....	.....	monthly
Bro. of Railway Trainmen, No. 322	20 00	.....	35	.....	mile.	basis	.....	.....	.....	.....	.....	monthly
Bro. of Railway Trainmen, No. 759	18 00	.....	.....	mile.	basis	.....	mile.	basis	.....	.....	.....	monthly
Int. Travellers' Goods and Leather Novelties, No. 5	12 50	.....	25	.....	47½	.....	5	.....	52½	.....	6	fortnightly
Int. Typographical Union, No. 91	18 50	all org	38	.....	44	.....	4	.....	48	.....	.....	weekly
Upholsterers' Int. Union, No. 30	16 50	11 50	33	23	45	45	5	5	50	50	12	weekly
Waiters' Union, No. 300	6 50	.....	.....	.....	70	.....	10	.....	80	.....	.....	fortnightly

WATERLOO:													
Jour. Stonecutters' Asso. of North America	21 60	.....	45	30	40	50	8	10	48	60	100	fortnightly
WELLAND:													
Bricklayers' and Masons' Int. Union, No. 32	26 77	all org	52½	.....	45	.....	5	.....	50	.....	.....	weekly
Amal. Soc. of Carpenters and Joiners, No. 809	18 90	16 20	35	30	45	45	9	9	54	54	94	fortnightly
Unit. Bro. of Carpenters and Joiners, No. 969	19 00	16 20	35	30	45	45	9	9	54	54	.....	weekly
United Garment Workers' Union, No. 274	18 00	all org	.....	.....	43	.....	5	.....	48	.....	.....	weekly
Int. Asso. of Machinists, No. 131	18 00	.....	30	.....	50	.....	5	.....	55	.....	.....	weekly
Int. Moulders' Union, No. 472	20 00	.....	32½	.....	50	.....	5	.....	55	.....	.....	weekly
Order of Railway Telegraphers, No. 16	18 00	18 00	20	20	60	60	12	12	72	72	none	monthly
WINDSOR:													
Jour. Barbers' Int. Union, No. 451	12 00	10 80	16	14	61¼	61¼	15⅜	15⅜	76	76	none	weekly
Bricklayers,' Masons' and P. Union, No. 6	27 50	all org	62½	.....	40	.....	4	.....	44	.....	90	weekly
Order of Railway Conductors, No. 494	20 00	20 00	mile.	basis	50	.....	10	.....	60	.....	.....	monthly
United Garment Workers of America, No. 190	20 00	.....	40	.....	43¾	.....	4¼	.....	48	.....	.....	weekly
Fed. Asso. of Letter Carriers, No. 16	13 50	13 50	28	28	40	40	8	8	48	48	none	fortnightly
Int. Bro. of Loco. Engineers, No. 390	25 00	all org	39	.....	mile.	basis	.....	.....	.....	.....	.....	monthly
National Asso. of Marine Engineers, No. 11	23 00	.....	32	.....	60	.....	12	.....	72	.....	90	monthly
American Federation of Musicians, No. 566	17 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	weekly
Operative Plasterers' Int. Asso., No. 345	27 74	.....	56	.....	45	.....	4	.....	49	.....	none	fortnightly
Unit. Asso. of Plumbers, etc., No. 552	22 50	20 25	47½	.....	40	40	4	4	44	44	60	.....
Switchmen's Union of North America, No. 184	24 79	24 79	37	37	55	55	11	11	66	66	30	monthly
Bro. of Railway Trainmen, No. 316	28 00	all org	40	.....	60	.....	10	.....	70	.....	.....	monthly
Int. Typographical Union, No. 553	15 00	.....	32	.....	43½	.....	4½	.....	48	.....	none	weekly
WOODSTOCK:													
Bricklayers', Masons' and P. Union, No. 22	24 30	all org	45	.....	45	.....	9	.....	54	.....	150	fortnightly

DIRECTORY OF CENTRAL LABOUR ORGANIZATIONS IN ONTARIO.

Name of Organization.	Date Organized.	Name of Secretary.	Secretary's Address.	Nights of Meeting.
BERLIN:				
Twin City Trades and Labour Council	1900	Urban Strub	Weber Apartments, Yonge Street	2nd & 4th Monds.
BRANTFORD:				
Trades and Labour Council	1886	H. J. Symons	115 Cayuga Street	1st & 2nd Weds.
BROCKVILLE:				
Trades and Labour Council	1900	Fred Clow	King St. W.	Every Friday.
FORT WILLIAM:				
Trades and Labour Council	1907	G. W. Howitt	Box 224	2nd & 4th Weds.
GALT:				
Galt and Preston Trades and Labour Council		A. L. Philp	53 Centre St.	
GUELPH:				
Trades and Labour Council	1898	Freeman Felker	114 Northumberland Street	2nd & 4th Frids.
HAMILTON:				
Trades and Labour Council	1888	W. R. Rollo	P. O. Box 323	1st & 3rd Frids.
Building Trades Council		Alex. Bonner	35 Steven St.	2nd & 4th Tues.
Garment Workers' District Council	1898	C. Bambrick	421 John St. North	2nd Wednesday.
KINGSTON:				
Trades and Labour Council		W. H. Godwin	14 Nelson St.	
LONDON:				
Trades and Labour Council	1902	J. L. Goodbourne	1050 Dundas St.	1st & 3rd Weds.
OTTAWA:				
Allied Trades and Labour Association	1897	Wm. Lodge	21 Creighton St.	1st & 3rd Thurs.
National Trades and Labour Council	1907	J. O'Heare	39 Cambridge St.	1st & 3rd Thurs.
Building Trades Council		Jos. Cinqmars	13 Poplar St.	
Allied Printing Trades Council		W. C. Blount	375 Lyon St.	
PETERBOROUGH:				
Trades and Labour Council		W. M. Stevens	Box 298	
PORT ARTHUR:				
Trades and Labour Council		A. F. Manchee	Labour Hall, Arthur St.	
SOUTH WATERLOO:				
Trades and Labour Council		J. W. Burgess	Middle St., Preston, Ont.	
ST. CATHARINES:				
Trades and Labour Council		Leo. T. Coyle	138 Church St.	1st & 3rd Weds.
ST. THOMAS:				
Trades and Labour Council		Jas. D. Ballantine	39 Flora Street	
TORONTO:				
Toronto District Labour Council	1881	T. A. Stevenson	Labour Temple	1st & 3rd Thurs.
Allied Printing Trades Council		William Sullivan	Labour Temple	2nd Tuesday.
Building Trades League	1905	R. A. Natson	272 Sackville St.	2nd & 4th Monds.
Marble Workers' Conference Board		Thomas Gough	177 Bleecker St.	

DIRECTORY OF CENTRAL LABOUR ORGANIZATIONS IN ONTARIO —*Continued.*

Name of Organization.	Date Organized.	Name of Secretary.	Secretary's Address.	Nights of Meeting.
TORONTO.—*Con.*				
United Brotherhood Carpenters and Joiners District Council		M. C. Clark	Labour Temple	2nd & 4th Monds.
Managing Committee Amalgamated Society Carpenters and Joiners		Geo. Thomson	223 Lippincott St.	Alternate Weds.
Painters' District Council		Jas. Stevenson	47 Curzon St.	4th Friday.
Garment Workers' Council		H. A. Keller	59 Grange Ave.	
Theatrical Council		W. D. Shank	49 Edwin Ave.	
Metal Trades Council		Jos. M. Helliker	191 Bolton Ave.	2nd & 4th Tues.
Iron Moulders' Board of Conference		J. H. Barnett	19 Rolyat St.	
Label Trades Department		D. W. Kennedy	58 Hook Ave.	
WINDSOR:				
Trades and Labour Council		W. K. Collard	102 Crawford Ave.	1st & 3rd Weds.
WELLAND:				
Trades and Labour Council		W. Powrie	Box 23	

ONTARIO INDUSTRIAL STATISTICS.

It is uphill work persuading the manufacturers of the Province to fill in and return the schedules that are sent to them for the purpose of obtaining information as to our industrial progress, but still there is a continual increase year by year, and there seems to be a growing conviction that the statistics thus obtained are treated as absolutely confidential as far as the identity of the firms and companies are concerned. Out of the 921 returns that have been received 89 do not give sufficient material for tabulation in our second series, so that these tables contain 832 establishments as compared with 819 last year, and 707, 642, 610, 536, 384, and 153 in the six previous years. These tables show that 61,637 persons were employed, with aggregate wages amounting to $37,806,066, and product to $156,712,991; that the aggregate number of days in operation was 235,000, the annual average wages was $532.70, and the average daily wage was $1.81. The whole of the industrial statistics show continued progress.

RETURNS IN DETAIL

LUMBER MANUFACTURERS.

Office No.	Capital employed, including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
1	35,000	150	25,000	no	no	150	200	.....	.....	20	.....
2	200,000	250	150,000	no	no	450	2,000	.....	.....	65	.....
3	74,303	305	50,000	10	.....	542	686	745	2,572	52	.....
4	35,000	75	5,000	no	no	200	40	.....	1,500	8	.....
5	893,339	156	403,614	8	.....	1,165	11,609	1,438	290,123	237	.....
6	60,000	100	65,000	no	no	225	2,500	.....	.....	50	.....
7	12,000	260	24,000	.....	20	82	320	.....	.....	16	.....
8	7,500	137	13,419	30	.....	39	.....	100	.....	11	.....
9	100,000	170	700,000	no	no	250	5,000	.....	15,000	200	.....
10	.....	175	.....	.....	.....	35	.....	.....	.....	6	.....
11	85,000	300	48,000	no	no	600	1,000	800	.....	45	.....
12	3,104	92	5,684	no	no	63	.....	.....	.....	5	.....
13	500,000	300	660,000	5	.....	.....	3,629	.....	.....	200	.....
14	420,000	300	360,000	.....	65	2,526	5,256	35,846	44,536	300	.....
15	100,000	300	92,000	.....	.....	75	.....	.....	.....	400	.....
16	150,000	180	125,000	no	no	560	2,500	.....	.....	50	.....
17	28,000	300	34,500	no	no	.....	425	.....	15,000	55	.....
18	150,000	300	50,000	.....	20	1,200	1,500	.....	.....	50	.....
19	75,000	250	75,000	yes	.....	.....	50	.....	.....	80	.....
20	25,000	103	50,000	.....	20	438	248	.....	250	20	.....
21	9,000	200	4,000	.....	20	19	.....	150	.....	6	.....
22	25,000	313	15,000	5	.....	78	150	.....	2,000	25	.....
23	15,000	100	8,000	.....	yes	60	200	.....	.....	12	.....
24	.....	113	120,000	.....	.....	1,354	2,353	4,819	1,805	120	.....
25	190,000	160	222,218	.....	25	666	4,526	.....	4,039	104	.....
26	8,000	98	5,800	no	no	93	108	.....	.....	9	.....
27	25,000	250	.....	.....	.....	230	300	.....	.....	5	.....
28	15,000	300	27,000	40	.....	189	410	3,000	.....	12	.....
29	71,150	300	147,913	30	.....	857	1,115	1,500	.....	50	.....
30	2,000	200	17,000	50	.....	.....	56	.....	.....	4	.....
31	10,000	130	25,000	75	.....	58	120	500	.....	25	.....
32	60,000	300	40,000	no	no	256	992	.....	500	20	.....
33	3,000	30	1,000	40	.....	35	.....	50	.....	10	.....
34	3,000	150	2,000	.....	.....	18	.....	.....	800	2	.....
35	200,000	175	1,000,000	.....	yes	6,000	15,000	.....	.....	500	.....
36	125,000	250	175,000	.....	20	618	2,800	.....	.....	80	.....
37	15,000	110	12,000	no	no	120	.....	.....	5,000	13	.....
38	5,000	150	5,000	.....	40	150	120	500	100	6	.....
39	200,000	300	50,000	.....	25	800	6,000	.....	.....	75	.....
40	25,000	300	175,000	no	no	.....	700	5,000	.....	12	.....
41	65,000	300	400,000	15	.....	1,382	1,770	.....	5,953	50	.....
42	100,000	313	223,437	9	.....	433	4,386	.....	25,000	200	.....
43	12,000	100	14,000	.....	.....	14	70	.....	.....	9	.....
44	18,000	300	25,000	.....	.....	107	346	760	.....	4	.....
45	15,000	150	.....	.....	.....	150	6,000	5,000	.....	5	.....
46	4,000	200	5,000	no	no	50	80	.....	.....	6	.....
47	5,000	....	.....	no	no	40	20	.....	.....	4	.....
48	100,000	100	60,000	.....	20	400	5,000	.....	.....	75	.....
49	30,000	300	36,000	no	no	140	390	.....	150	8	.....
50	.....	200	10,000	no	no	120	100	.....	.....	15	.....
51	3,000	300	5,000	.....	20	150	115	.....	350	6	.....
52	15,000	100	80,000	yes	.....	16	140	.....	.....	15	.....
53	300,000	162	400,000	.....	.....	1,940	.....	15,400	.....	145	.....
54	27,000	138	22,157	10	.....	.....	300	500	.....	20	.....
55	10,000	175	11,000	.....	20	.....	178	.....	.....	12	.....
56	1,000,000	180	600,000	no	no	.....	2,386	5,000	.....	250	.....

FROM MANUFACTURERS.

SAWMILLS.—TABLE No. 1.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
6,000	.....	15 00	12 00	.....	.....	.....	.....	.....	no	no	.....	.....	1
27,500	.....	17 25	10 50	.....	.....	1	.....	600	10	.....	10	10	2
36,438	.....	21 00	12 75	.....	.....	5	1	5,000	10	.....	10	10	3
3,600	.....	34 60	average	.....	.....	.....	.....	.....	no	no	.....	.....	4
87,019	.....	18 18	8 40	.....	.....	5	1	12,260	11	.....	11	.....	5
10,000	.....	36 00	12 00	.....	.....	1	1	1,200	no	no	.....	.....	6
4,800	.....	15 00	9 90	.....	.....	1	.....	1,200	10	.....	10	10	7
3,380	.....	.....	12 00	.....	.....	.....	.....	.....	no	no	.....	.....	8
90,000	.....	30 00	13 50	.....	.....	6	.....	.....	no	no	.....	.....	9
.....	.....	12 00	10 50	.....	.....	.....	.....	.....	no	no	.....	.....	10
24,000	.....	18 00	13 50	.....	.....	3	.....	2,800	no	no	.....	.....	11
1,104	.....	15 00	12 00	.....	.....	.....	.....	.....	20	.....	20	.....	12
96,355	.....	30 00	12 00	.....	.....	27	1	36,000	10	.....	10	.....	13
109,643	.....	31 50	15 00	.....	.....	6	1	10,500	5	.....	5	.....	14
44,000	.....	19 50	15 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
15,000	.....	24 00	12 00	.....	.....	2	.....	2,000	no	no	.....	.....	16
16,000	.....	18 00	11 25	.....	.....	.....	.....	.....	9	.....	.....	.....	17
21,930	.....	25 50	11 25	.....	.....	2	1	3,000	10	.....	10	.....	18
30,000	.....	9 40	average	.....	.....	1	.....	3,500	no	no	.....	.....	19
28,000	.....	10 50	9 00	.....	.....	.....	.....	.....	no	no	.....	.....	20
1,200	.....	.....	9 60	.....	.....	2	.....	700	.....	.....	.....	.....	21
10,250	.....	18 00	8 10	.....	.....	2	.....	960	5	.....	5	.....	22
1,800	.....	.....	9 00	.....	.....	2	.....	1,500	no	no	.....	.....	23
28,109	.....	21 60	10 50	.....	.....	2	.....	2,935	.....	.....	.....	.....	24
43,077	.....	25 80	10 50	.....	.....	7	1	16,377	no	no	.....	.....	25
2,130	.....	15 00	9 00	.....	.....	.....	.....	.....	no	no	.....	.....	26
3,500	.....	15 00	12 00	.....	.....	2	.....	2,000	yes	.....	.....	.....	27
.....	.....	24 00	12 00	.....	.....	4	.....	1,440	12	.....	12	12	28
31,577	.....	15 00	9 00	.....	.....	3	2	7,114	7½	.....	7½	7½	29
1,600	.....	15 00	12 00	.....	.....	.....	.....	.....	no	no	.....	.....	30
6,500	.....	12 00	10 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	31
10,000	.....	18 00	9 75	.....	.....	3	.....	2,000	no	no	.....	.....	32
400	.....	12 00	9 00	.....	.....	.....	.....	.....	no	no	.....	.....	33
600	.....	12 00	average	.....	.....	.....	.....	.....	no	no	.....	.....	34
200,000	.....	30 00	11 25	.....	.....	15	.....	30,000	10	.....	10	10	35
32,700	.....	27 00	12 00	.....	.....	5	.....	5,100	7	.....	7	.....	36
3,400	.....	12 00	9 00	.....	.....	.....	.....	.....	no	no	.....	.....	37
3,000	.....	12 00	9 00	.....	.....	.....	.....	.....	no	no	.....	.....	38
30,000	.....	27 00	11 25	.....	.....	3	1	6,000	no	no	.....	.....	39
7,000	.....	10 00	average	.....	.....	.....	.....	.....	5	.....	.....	.....	40
30,533	.....	19 50	12 00	.....	.....	6	2	7,391	5	.....	5	5	41
109,550	.....	18 00	10 50	.....	.....	5	.....	6,680	10	.....	10	10	42
1,800	.....	.....	12 00	.....	.....	.....	.....	.....	no	no	.....	.....	43
1,625	.....	12 00	9 00	.....	.....	.....	.....	.....	yes	.....	.....	.....	44
1,200	.....	10 00	average	.....	.....	.....	.....	.....	no	no	.....	.....	45
1,200	.....	10 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47
30,000	.....	27 00	10 50	.....	3	.....	1	6,600	no	no	.....	.....	48
1,796	.....	10 50	.....	.....	.....	.....	.....	.....	no	no	.....	.....	49
6,000	.....	13 50	12 00	.....	.....	.....	1	400	10	.....	.....	.....	50
2,800	.....	9 00	.....	.....	.....	.....	.....	.....	10	.....	.....	.....	51
5,000	.....	20 00	.....	.....	.....	.....	.....	.....	20	.....	.....	.....	52
45,100	.....	11 00	.....	.....	.....	4	.....	6,420	.....	.....	.....	.....	53
5,550	.....	13 32	average	.....	.....	.....	1	200	no	no	.....	.....	54
5,950	.....	15 00	9 90	.....	.....	.....	.....	.....	.....	.....	.....	.....	55
145,000	.....	19 33	average	.....	.....	5	.....	4,500	10	.....	10	10	56

RETURNS IN DETAIL

LUMBER MANUFACTURERS

Office No.	Capital employed, including plant.	No. of days in operation during 1911.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
57	40,000	305	100,000	20	.....	180	800	1,500	.....	75	.....
58	15,000	305	12,000	25	.....	14	.....	.....	.....	10	.....
59	2,500,000	313	3,418,000	no	no	55,000	35,000	150,000	25,000	2,250	6
60	100,000	....	.....	.....	.....	400	504	5,000	.....	10	.....
61	30,000	300	3,000	50	.....	96	20	100	200	11	2
62	35,000	150	12,000	10	.....	140	22	.....	.....	16	.....
63	1,800	300	1,600	.....	.....	17	.....	.....	.....	2	.....
64	6,000	50	4,500	.....	.....	19	50	.....	.....	5	.....
65	1,500,000	300	800,000	5	.....	5,750	11,100	.....	8,500	300	.....
66	50,000	160	100,000	.....	.....	500	690	8,000	.....	40	.....
67	50,000	300	60,000	10	.....	150	300	.....	.....	75	1
68	150,000	305	200,000	50	.....	600	3,000	.....	15,000	175	.....
69	1,500	25	900	.....	yes	30	.....	30	.....	3	.....

PLANING MILLS, SASH AND DOOR

70	63,000	295	402,897	17	.....	980	1,715	.....	327,856	45	.....
71	10,000	250	7,500	no	no	21	90	.....	.....	8	.....
72	289,400	300	500,000	40	.....	2,000	3,684	.....	13,077	240	.....
73	58,500	300	38,350	25	.....	92	540	.....	5,820	14	.....
74	150,000	311	248,000	13	.....	1,609	4,200	4,800	2,500	75	.....
75	20,000	305	55,000	30	.....	160	400	.....	.....	12	.....
76	75,388	300	129,690	20	.....	468	1,800	.....	.....	65	.....
77	10,000	250	.....	.....	.....	113	100	1,500	.....	5	.....
78	110,000	300	112,000	12	.....	400	1,900	4,000	1,700	50	.....
79	118,000	290	184,379	25	.....	270	1,325	.....	1,475	70	.....
80	25,600	300	63,800	9	.....	384	1,550	.....	.....	17	.....
81	65,000	305	150,000	15	.....	423	489	3,200	.....	14	.....
82	11,526	295	44,400	7	.....	193	450	125	805	9	.....
83	75,000	300	140,000	15	.....	550	500	4,000	.....	50	.....
84	10,000	60	8,000	.....	25	31	100	100	.....	15	.....
85	50,000	280	25,000	12½	.....	240	.....	.....	1,000	25	.....
86	150,000	305	25,000	25	.....	820	56	2,400	.....	38	.....
87	130,000	300	150,000	no	no	904	1,397	5,000	.....	58	.....
88	8,000	300	7,500	10	.....	110	200	.....	.....	7	.....
89	50,100	313	61,700	no	no	155	575	.....	2,315	30	.....
90	75,000	300	125,000	no	no	637	2,700	.....	100,000	90	.....
91	15,000	200	10,000	.....	10	52	105	350	.....	3	.....
92	300,000	150	200,000	yes	.....	750	11,000	2,000	.....	112	.....
93	200,000	300	55,000	.....	2	1,189	2,031	1,500	50,000	60	.....
94	25,000	300	30,000	no	no	300	400	1,000	.....	40	.....
95	30,000	305	.....	yes	.....	100	400	1,000	.....	8	.....
96	.....	305	.....	20	.....	110	85	.....	.....	6	.....
97	150,000	300	188,000	.....	15	1,600	3,000	2,000	4,000	100	.....
98	10,000	312	10,000	10	.....	68	17	50	.....	5	.....
99	4,000	150	.....	yes	.....	40	.....	300	.....	4	.....
100	15,000	285	8,000	no	no	150	200	200	.....	5	.....
101	150,000	305	250,000	17½	.....	600	1,200	.....	.....	48	.....
102	25,000	313	60,000	10	.....	150	175	.....	.....	10	.....
103	1,200	15	.....	.....	.....	250	.....	.....	.....	.....	.....
104	15,000	250	.....	.....	20	52	162	300	.....	3	.....

FROM MANUFACTURERS.

SAWMILLS—TABLE No. 1 (Continued).

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c	$ c.	$ c.			$	%	%	%	%	
45,000	.....	12 00	average	.....	.....	3	....	2,760	10	....	10	20	57
4,000	.....	11 40	average	.....	.....	....	1	500	yes	....	.....	.....	58
1,500,000	2,480	34 50	11 52	.....	6 75	25	1	50,000	17½	....	17½	17½	59
8,500	.....	18 00	12 00	.....	.....	3	....	3,350	no	no	.....	.....	60
4,400	300	12 00	9 00	4 50	3 00	1	1	400	25	....	25	25	61
4,300	.....	12 00	10 50	.....	.....	....	....	.....	.....	....	.....	.....	62
375	.....	.....	7 50	.....	.....	....	....	.....	.....	....	.....	.....	63
1,000	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	64
156,000	.....	10 40	average	.....	.....	25	3	25,000	7½	....	7½	.....	65
39,000	.....	21 50	12 00	.....	.....	3	2	.....	.....	....	.....	.....	66
20,000	450	15 00	9 00	.....	.....	....	1	450	10	....	10	10	67
35,000	.....	18 00	11 00	.....	.....	10	2	6,500	5	....	5	5	68
100	.....	9 00	.....	.....	.....	....	....	.....	25	....	25	.....	69

FACTORIES, ETC.—TABLE No 2.

31,530	.....	18 75	11 00	.....	.....	6	2	9,237	.....	....	.....	.....	70
3,750	.....	12 75	10 50	.....	.....	....	....	.....	12½	....	.....	.....	71
117,000	.....	23 25	12 75	.....	.....	10	2	13,000	10	....	10	10	72
5,713	.....	12 00	9 00	.....	.....	2	1	4,837	15	....	15	.....	73
37,284	.....	18 75	10 80	.....	.....	5	1	7,800	10	....	10	10	74
6,600	.....	17 25	12 75	.....	.....	....	....	.....	10	....	.....	.....	75
23,299	.....	18 00	10 50	.....	.....	1	1	1,365	20	....	20	20	76
3,200	.....	18 00	12 00	.....	.....	....	....	.....	.....	....	.....	.....	77
29,500	.....	21 00	9 00	.....	.....	3	1	4,000	8	....	8	8	78
28,864	.....	13 95	7 50	.....	.....	....	2	884	10	....	10	10	79
19,850	.....	25 50	21 00	.....	.....	3	....	5,100	.....	3	3	.....	80
9,360	.....	21 00	12 00	.....	.....	2	1	2,184	10	....	10	10	81
5,667	.....	21 00	13 20	.....	.....	2	....	1,500	no	no	.....	.....	82
29,000	.....	15 00	12 00	.....	.....	2	1	2,500	.....	....	.....	.....	83
925	.....	18 00	9 00	.....	.....	....	....	.....	10	....	10	.....	84
10,000	.....	18 00	9 00	.....	.....	....	....	.....	12	....	12	.....	85
25,700	.....	.....	.....	.....	.....	2	....	1,200	10	....	10	10	86
40,000	.....	17 00	11 00	.....	.....	4	1	6,000	5	....	5	.....	87
4,680	.....	.....	12 00	.....	.....	....	....	.....	15	....	.....	.....	88
10,949	.....	18 00	10 50	.....	.....	4	....	2,996	no	no	.....	.....	89
35,000	.....	18 75	10 50	.....	.....	9	1	7,500	15	....	15	15	90
1,400	.....	12 00	9 00	.....	.....	1	....	600	10	....	10	10	91
46,000	.....	31 50	12 75	.....	.....	5	....	4,000	no	no	.....	.....	92
41,433	.....	16 50	9 78	.....	.....	10	3	10,700	2	....	2	2	93
15,000	.....	15 00	9 00	.....	.....	2	....	1,500	no	no	.....	.....	94
4,200	.....	13 50	9 00	.....	.....	1	....	600	.....	....	.....	.....	95
3,100	.....	10 34	average	.....	.....	1	....	600	13	....	13	.....	96
60,000	.....	16 20	12 00	.....	.....	5	2	8,000	.....	20	20	.....	97
1,500	.....	12 00	6 00	.....	.....	....	....	.....	20	....	.....	.....	98
.....	.....	9 00	.....	.....	.....	....	....	.....	yes	....	.....	.....	99
2,000	.....	14 00	average	.....	.....	....	....	.....	10	....	.....	.....	100
30,000	.....	24 00	10 50	.....	.....	3	1	5,000	10	....	10	.....	101
8,000	.....	18 00	12 00	.....	.....	....	1	450	15	....	15	15	102
.....	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	103
900	.....	12 00	9 00	.....	.....	1	....	600	no	no	.....	.....	104

RETURNS IN DETAIL

PLANING MILLS, SASH AND DOOR

Office No.	Capital employed, including plant.	No. of days in operation during 1911.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
105	20,000	305	10,000	no	no	190	8,000	.....	.....	10	.....
106	12,000	305	20,000	no	no	74	400	.....	.....	6	.....
107	25,000	290	40,000	10	.....	300	.....	200	.....	20	.....
108	30,000	300	50,000	25	.....	289	291	.....	.....	10	.....
109	5,000	300	10,000	20	.....	35	50	400	.....	5	.....
110	3,000	150	3,200	.....	.....	43	.....	.....	.....	2	.....
111	800	30	.....	.....	.....	.....	.....	.....	.....	9	.....
112	10,000	306	.....	no	55	75	500	.....	.....	3	.....
113	4,000	250	4,000	2	.....	72	.....	.....	.....	3	.....
114	16,000	309	.....	no	no	71	.....	.....	.....	2	.....
115	100,000	300	290,000	10	.....	880	960	1,800	.....	50	.....
116	800,000	305	616,067	25	.....	620	5,822	.....	.....	80	4

WOODWORKING FACTORIES, SPECIALTIES

117	6,000	200	10,000	yes	.....	33	.....	200	.....	6	.....
118	510,498	295	378,220	18	.....	1,000	720	.....	7,875	110	15
119	26,978	302	92,486	14	.....	270	1,498	1,800	2,808	160	.....
120	10,000	250	144,500	30	.....	670	3.154	5,600	.....	75	.....
121	6,000	300	8,000	no	no	90	46	.....	.....	3	.....
122	5,850	312	6,825	5	.....	73	201	503	.....	8	.....
123	129,000	300	134,580	20	.....	273	1,470	.....	9,838	110	16
124	5,000	300	8,000	10	.....	133	44	250	50	4	.....
125	35,000	300	30,000	25	.....	275	650	.....	.....	30	.....
126	41,000	270	75,000	yes	.....	360	300	4,000	.....	33	4
127	50,000	280	60,000	.....	.....	144	1,209	350	5,237	66	.....
128	15,000	295	35,000	12	.....	200	480	15.000	.....	30	1
129	11,700	285	32,000	no	no	64	469	285	.....	34	5
130	28,873	275	112,000	55	.....	177	710	3,440	2,168	12	12
131	10,000	225	8,500	20	.....	45	30	500	.....	13	.....
132	75,000	175	35,000	25	.....	175	1,450	2,000	.....	45	.....
133	.....	280	.....	no	no	90	517	500	.....	35	1
134	20,000	305	35,000	25	.....	60	100	1,300	.....	10	.....
135	40,000	305	97,400	.....	.....	186	1,269	.....	.....	48	.....
136	75,000	300	106,482	5	.....	464	1,110	.....	1,189	45	.....
137	100,000	300	180,000	15	.....	537	582	1,500	.....	58	20
138	85,300	300	91,262	50	.....	325	300	16,316	50,650	20	12
139	7,000	300	19,000	no	no	32	300	.....	.....	25	2
140	100,000	305	100,000	no	no	340	1,650	.....	.....	90	20
141	3,000	300	10,000	no	no	.....	.....	.....	.....	5	.....
142	2,500	300	6,000	no	no	30	26	.....	.....	6	.....
143	35,000	300	135,000	25	.....	134	210	.....	.....	7	30
144	50,000	305	153,000	2	.....	807	2,250	.....	.....	75	.....
145	10,000	312	12,500	no	no	80	100	.....	.....	6	.....
146	2,000	300	3,000	20	.....	30	30	.....	.....	3	1
147	25,000	300	14,000	no	no	650	75	1,000	.....	5	.....
148	157,500	312	.....	.....	.....	.....	.....	.....	.....	.....	.....
149	30,000	305	31,800	81	.....	270	400	.....	.....	10	.....
150	50,000	125	20,000	10	.....	263	1,250	2,500	.....	50	.....
151	50,000	300	60,000	no	no	474	425	1,800	.....	36	.....
152	5,000	260	5,250	.....	.....	35	47	.....	.....	4	.....
153	700	200	935	.....	10	.....	4	.....	.....	.....	.....
154	40,000	100	100,000	no	no	150	2,000	10.000	1,000	50	.....

FROM MANUFACTURERS.

FACTORIES, ETC.—TABLE No. 2.—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
6,000	.....	18 00	9 75	.....	.....	1	1	1,560	no	no	.....	.....	105
3,000	.....	13 50	10 50	.....	.....	.....	.....	.....	10	....	10	.....	106
18,000	.....	24 00	.....	.....	.....	2	....	2,000	no	no	.....	.....	107
5,242	.....	21 00	12 30	.....	.....	1	1	1,568	yes	....	.....	.....	108
2,400	.....	15 00	12 00	.....	.....	.....	.....	.....	10	....	.....	.....	109
216	.....	.....	9 00	.....	.....	.....	.....	.....	no	no	.....	.....	110
425	.....	9 40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	111
2,080	.....	1,500	10,00	.....	.....	.....	.....	.....	5	....	5	.....	112
.....	.....	1,600	12 00	.....	.....	.....	.....	.....	no	no	.....	.....	113
1,000	.....	10 50	.....	.....	.....	.....	.....	.....	no	no	.....	.....	114
33,000	.....	18 00	12 00	.....	.....	4	.....	.....	5	....	5	5	115
48,757	1,700	17 50	9 75	11 00	.....	5	4	6,600	5	....	5	5	116

IN WOODENWARE.—TABLE No. 3.

1,500	.....	10 50	8 40	.....	.....	.....	.....	.....	10	....	.....	.....	117
79,960	4,501	17 50	9 00	9 00	5 50	12	10	17,009	6	....	5	10	118
18,111	.....	21 00	10 50	.....	.....	5	2	9,400	4	....	4	4	119
24,720	.....	20 25	18 25	.....	.....	5	....	5,150	10	....	10	10	120
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	121
3,725	.....	10 50	7 00	.....	.....	.....	.....	.....	7½	....	.....	.....	122
43,716	3,650	28 50	9 75	6 00	.....	3	1	4,500	no	no	.....	.....	123
3,600	.....	18 00	.....	.....	.....	.....	.....	.....	10	....	.....	.....	124
12,000	.....	12 00	.....	.....	.....	.....	.....	.....	20	....	.....	.....	125
19,000	both	16 50	9 00	.....	.....	1	....	1,500	10	....	10	10	126
34,867	.....	19 50	12 00	.....	.....	2	1	3,000	7½	....	7½	7½	127
21,000	450	18 00	13 50	9 00	.....	2	1	2,600	12½	....	12½	12½	128
13,710	998	10 50	7 50	.....	4 20	2	1	2,660	10	....	10	.....	129
4,975	2,520	18 00	4 50	6 50	4 50	2	....	4,500	6	....	6	.....	130
3,000	.....	9 75	6 75	.....	.....	.....	.....	.....	17½	....	17½	.....	131
10,000	.....	19 50	12 00	.....	.....	2	....	1,050	13½	....	.....	.....	132
.....	.....	15 00	9 00	7 00	.....	3	1	.....	5	....	5	5	133
5,000	.....	18 00	12 00	.....	.....	1	1	3,500	yes	....	.....	.....	134
28,283	.....	16 20	9 00	.....	.....	7	2	9,652	.....	.....	.....	.....	135
18,760	.....	8 30	average	.....	.....	2	....	2,280	5	....	5	5	136
25,475	both	15 25	9 00	7 00	5 25	8	5	12,000	5	....	5	5	137
12,617	4,072	15 00	.....	7 80	.....	3	....	7,338	yes	....	.....	.....	138
11,000	500	12 00	9 00	6 00	.....	.....	.....	.....	.....	.....	.....	.....	139
46,542	both	19 50	11 25	7 50	5 70	3	1	1,500	5	....	5	.....	140
2,800	.....	.....	750	.....	.....	.....	.....	.....	.....	....	.....	.....	141
3,500	.....	27 00	.....	.....	.....	.....	.....	.....	10	....	10	.....	142
12,000	both	6 50	average	for	all	14	2	16,000	no	no	.....	.....	143
21,560	.....	15 00	10,50	.....	.....	2	....	2,200	10	....	10	10	144
1,800	.....	9 00	6 00	.....	.....	.....	.....	.....	10	....	.....	.....	145
1,500	300	10 00	.....	6 00	.....	.....	.....	.....	10	....	.....	.....	146
3,730	.....	17 00	8 00	.....	.....	1	....	1,800	no	no	.....	.....	147
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	148
4,600	.....	8 11	average	.....	.....	1	1	780	29	....	.....	.....	149
9,000	.....	19 50	10 50	.....	.....	1	....	600	8	....	8	8	150
18,500	.... :	10 30	average	.....	.....	.....	.....	.....	8	....	.....	.....	151
2,000	.....	12 00	9 00	.....	.....	.....	.....	.....	⅛	....	.....	.....	152
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	153
12,000	.....	24 00	12 00	.....	.....	4	....	3,000	yes	....	.....	.....	154

RETURNS IN DETAIL

Woodworking Factories, Specialties

Office No.	Capital employed, including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
155	20,000	306	30,000	no	no	272	240	800	.....	20	1
156	5,017	280	10,385	25	.....	7	20	523	2,470	10	.....
157	90,000	300	80,000	.....	25	.....	500	.....	.....	40	.....
158	30,000	300	110,000	10	.....	40	486	.....	.....	32	7
159	12,900	305	8,000	.....	38	160	341	.....	.....	8	.....
160	20,000	300	40,000	25	.....	.....	509	.....	.....	45	4
161	203,330	288	188,800	10	.....	640	1,122	5,000	4,029	110	12

Furniture Manufacturers; Bank, Store

162	.....	303	310,000	26	.....	1,060	1,100	.....	.....	155	1
163	50,000	300	80,000	10	.....	286	929	7,000	18,300	40	.....
164	200,000	300	225,000	25	.....	1,187	2,089	.....	.....	75	15
165	91,520	300	74,930	.....	.....	29	211	18	50,305	16	.....
166	559,137	298	384,953	3	.....	3,308	1,652	8,400	8,155	282	28
167	700,000	305	175,000	10	.....	3,233	724	10,000	19,821	110	.....
168	.....	298	133,000	10	.....	1,053	1,810	.....	.....	60	.....
169	160,000	300	273,000	25	.....	799	668	.....	.....	180	3
170	450,000	300	450,000	40	.....	392	1,336	6,000	10,000	370	30
171	75,000	300	100,000	25	.....	271	1,421	3,000	.....	56	.....
172	32,100	300	71,000	7	.....	151	805	1,633	38,923	47	.....
173	90,000	300	123,000	10	.....	308	365	.....	5,000	67	.....
174	75,000	305	87,000	15	.....	134	600	5,500	300	44	.....
175	80,000	300	87,028	6½	.....	222	245	3,900	8,023	66	.....
176	200,000	300	200,000	10	.....	500	1,800	12,000	.....	150	.....
177	150,000	300	200,000	10	.....	582	634	5,000	.....	125	10
178	40,000	300	90,000	20	.....	95	950	.....	.....	55	.....
179	289,742	300	234,729	7½	.....	1,450	901	.....	29,885	140	.....
180	85,000	304	150,000	20	.....	750	309	6,000	.....	100	10
181	61,366	295	76 751	33⅓	.....	66	767	500	15,739	55	.....
182	200,000	280	153,882	18	.....	1,001	848	225	6,000	86	.....
183	100,000	300	105,000	yes	.....	279	887	2,285	.....	55	.....
184	55,000	300	50,000	no	no	140	500	.....	.....	30	.....
185	25,000	302	42,000	20	.....	116	575	7,000	1,363	34	.....
186	333,000	300	360,000	20	.....	1,600	3,099	15,000	19,500	100	2
187	162,500	300	150,000	10	.....	494	160	2,000	.....	65	.....
188	14,600	300	34,459	90	.....	76	396	908	1,640	18	.....
189	109,431	300	75,000	no	no	355	203	.....	.....	50	.....
190	90,000	300	100,000	12	.....	379	2,300	.....	.....	65	.....
191	52,000	300	121,000	35	.....	146	1,375	.....	815	55	3
192	75,000	300	180,000	yes	.....	400	500	40,000	.....	125	.....
193	250,000	305	200,000	15	.....	.....	1,100	3,500	500	85	15
194	31,793	305	31,020	4½	.....	127	439	230	788	14	11
195	30,000	305	52,000	8½	.....	168	565	3,000	200	38	.....
196	90,000	300	122,000	10	.....	310	365	1,500	500	65	.....
197	100,000	300	100,000	10	.....	400	300	500	2,500	80	50
198	80,000	300	65,000	yes	.....	1,100	.....	.....	.....	21	.....
199	75,000	300	100,000	no	no	600	1,400	10,000	.....	70	.....
200	60,000	300	50,000	2	.....	400	350	500	.....	38	3
201	10,000	300	15,000	yes	.....	55	27	.....	.....	12	.....
202	54,983	300	55,131	8	.....	200	425	.....	2,317	44	.....
203	60,000	300	100,000	.....	yes	209	1,254	12,000	1,607	75	4
204	200,000	300	300,000	40	.....	250	400	100,000	20,000	160	.....
205	360,000	290	472,000	2½	.....	1,033	686	.....	45,550	350	.....

FROM MANUFACTURERS.

IN WOODENWARE.—TABLE No. 3.—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
11,500	300	11 35	11 35	.....	.....	2	....	1,450	.....	....	.....	.....	155
6,991	.....	21 00	7 50	.....	.....	1	....	.....	25	....	25	.....	156
20,000	.....	.....	.....	.....	.....	1	1	1,300	10	....	10	10	157
13,342	1,890	.....	.....	.....	.....	5	....	4,400	5	....	5	.....	158
3,200	.....	.....	.....	.....	.....	2	....	1,200	.....	....	.....	.....	159
21,840	1,560	16 50	9 00	10 00	7 50	.....	.....	.....	12½	....	12½	.....	160
52,616	4,320	15 00	10 50	9 00	6 00	6	2	9,150	same	....	.....	.....	161

AND OFFICE FITTINGS.—TABLE No. 4.

86,000	450	12 00	average	8 40	.....	4	2	9,000	3	....	3	.....	162
17,651	.....	18 00	15 00	.....	.....	.....	2	900	yes	....	.....	.....	163
38,000	4,000	16 50	12 00	8 00	4 00	2	4	7,840	10	....	10	.....	164
8,243	.....	13 50	.....	.....	.....	1	1	2,112	7	....	7	.....	165
119,582	6,144	15 00	8 40	6 00	4 00	7	7	21,334	4	....	5	1½	166
70,000	.....	16 50	10 80	.....	.....	12	....	.....	5	....	5	5	167
40,000	.....	15 75	10 50	.....	.....	.....	.....	.....	.....	....	.....	.....	168
82,875	784	10 80	7 50	5 22	.....	6	3	5,662	5	....	5	5	169
195,000	9,500	20 40	11 10	7 20	4 20	15	7	15,000	5	....	5	5	170
27,260	.....	12 90	8 40	.....	.....	4	2	4,400	10	....	10	.....	171
18,073	.....	9 60	8 40	.....	.....	1	....	1,500	no	no	.....	.....	172
36,000	.....	12 00	9 00	.....	.....	3	1	4,300	10	....	10	10	173
23,000	.....	15 00	9 75	.....	.....	2	2	4,700	7½	....	7½	7½	174
28,294	.....	8 58	average	.....	.....	3	....	3,714	yes	....	yes	yes	175
61,000	.....	13 00	9 00	.....	.....	6	3	9,000	5	....	5	.....	176
60,000	1,000	14 40	6 10	4 50	3 00	3	2	2,000	10	....	10	.....	177
25,000	.....	14 25	7 20	.....	.....	1	1	1,500	10	....	10	.....	178
66,497	.....	13 50	9 75	.....	.....	5	....	7,178	10	....	10	.....	179
57,000	3,000	18 90	11 00	6 00	.....	4	1	6,000	5	....	5	5	180
26,120	.....	13 50	9 00	.....	.....	2	....	2,300	5	....	5	5	181
48,925	.....	18 00	12 00	.....	.....	5	1	8,000	10	....	10	10	182
26,300	.....	16 50	7 50	.....	.....	3	....	2,200	7½	....	7½	.....	183
11,280	.....	7 52	average	.....	.....	2	1	2,500	9¼	....	9¼	.....	184
19,764	.....	11 70	9 00	.....	.....	1	....	1,200	5	....	5	5	185
55,000	1,200	18 00	13 50	18 00	12 00	19	4	26,200	10	....	10	.....	186
25,000	.....	15 00	9 75	.....	.....	2	1	3,700	10	....	10	.....	187
10,600	.....	14 25	10 50	.....	.....	1	....	1,000	10	....	10	.....	188
19,531	.....	18 00	15 00	.....	.....	3	....	4,300	no	no	.....	.....	189
30,000	.....	16 50	10 50	.....	.....	2	2	2,500	10	....	.....	.....	190
23,585	815	13 50	9 00	6 00	.....	4	2	12,400	10	....	10	10	191
60,000	.....	17 25	11 25	.....	.....	3	4	6,000	yes	....	yes	yes	192
42,000	both	14 25	11 25	6 75	.....	5	2	5,500	20	....	20	20	193
9,213	2,811	16 50	6 00	6 00	4 00	6	3	6,552	no	no	.....	.....	194
16,500	.....	13 50	4 50	.....	.....	.....	1	300	5	....	.....	.....	195
8,500	.....	13 00	8 50	.....	.....	3	1	4,500	yes	....	yes	.....	196
35,000	1,350	14 00	average	6 00	.....	3	1	4,000	10	....	10	10	197
10,000	.....	9 52	average	.....	.....	1	....	2,000	yes	....	.....	.....	198
27,000	.....	18 00	12 00	.....	.....	5	1	7,000	10	....	10	10	199
23,800	1,000	15 00	11 00	.....	.....	3	2	.....	6	....	6	6	200
7,200	.....	12 00	average	.....	.....	.....	.....	.....	.....	....	.....	.....	201
19,718	.....	9 66	average	.....	.....	5	1	6,400	11½	....	11½	11½	202
31,221	1,430	13 50	10 50	.....	5 50	3	2	5,384	no	no	no	no	203
80,000	.....	15 00	9 50	.....	.....	5	1	6,000	10	....	10	10	204
150,000	.....	22 00	15 00	.....	.....	.....	.....	35,850	10	....	10	10	205

RETURNS IN DETAIL

Carriages and Other Vehicles and Parts

Office No.	Capital employed, including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
206	200,000	300	800,000	.....	5	500	2,300	12,000	.....	375	5
207	68,070	300	20,709	no	no	637	186	.....	.....	11	.....
208	28,000	275	50,000	no	no	125	625	700	.....	16	.....
209	100,000	300	166,971	.....	10	209	757	492	.....	65	1
210	125,000	312	150,000	20	.....	679	1,491	.....	6,719	60	.....
211	11,000	305	2,000	yes	.....	106	45	300	.....	4	.....
212	10,000	300	24,000	no	no	120	200	.....	.....	12	.....
213	35,000	300	30,000	no	no	50	500	.....	.....	20	.....
214	250,000	287	286,818	.....	4	1,650	2,623	10,000	15,000	126	.....
215	90,000	308	209,214	9	.....	983	562	.....	8,485	175	3
216	166,000	313	365,000	34	.....	1,908	4,900	52,829	32,148	175	5
217	65,000	300	57,000	10	.....	95	900	300	.....	25	.....
218	1,000,000	305	5,000,000	131	.....	.....	500	900,000	300,000	1,200	.....
219	20,000	300	88,500	56	.....	71	241	.....	4,800	38	.....
220	200,000	300	246,794	.....	1	602	653	2,831	9,256	90	.....
221	40,000	313	25,000	20	.....	150	125	.....	.....	13	.....
222	500,000	305	648,855	yes	.....	2,204	.....	21,762	29,910	185	.....
223	3,000	305	3,000	.....	.....	25	100	200	.....	3	.....
224	207,500	300	388,000	10	.....	886	1,600	10,000	233,269	159	3
225	90,000	300	40,000	no	no	360	.....	.....	.....	16	1
226	1,500,000	300	700,000	50	.....	650	2,000	.....	25,000	300	.....
227	194,120	307	214,930	28	.....	866	1,260	1,815	37,393	55	.....
228	200,000	300	120,000	5	.....	325	450	1,000	.....	50	2
229	15,000	365	40,000	no	no	419	.....	.....	.....	12	.....
230	50,000	270	50,000	no	no	121	1,753	.....	.....	25	.....
231	20,000	310	20,000	30	.....	107	150	.....	500	10	1

Agricultural Implements, Farming Hand

232	235,000	300	89,000	no	no	228	400	28,100	.....	35	.....
233	150,000	305	303,000	50	.....	650	900	.....	195,000	118	.....
234	314,860	288	210,000	no	no	1,235	1,414	50,000	.....	100	.....
235	150,000	300	200,000	20	.....	230	1,050	20,000	.....	70	.....
236	40,000	300	90,000	10	.....	148	450	50	7,114	12	14
237	6,000	300	9,000	no	no	48	35	.....	.....	3	.....
238	50,000	305	179,561	4½	.....	516	476	.....	54,636	14	.....
239	50,000	285	32,000	yes	.....	16	363	.....	.....	7	.....
240	10,000	250	8,000	no	no	140	87	.....	.....	7	.....
241	400,000	305	300,000	yes	.....	1,200	3,000	1,500	.....	40	35
242	215,000	85	14,000	.....	.....	1,426	1,900	.....	.....	30	16
243	33,000	300	35,000	10	.....	104	425	.....	.....	20	.....
244	100,000	300	65,000	no	no	213	513	1,500	.....	34	.....
245	220,000	305	200,000	no	no	300	2,067	500	.....	50	.....
246	200,000	280	221,372	yes	.....	1,234	1,564	22,214	.....	95	.....
247	1,500,000	305	2,200,000	no	no	4,247	.....	.....	.....	265	45
248	105,500	308	130,350	no	no	579	4,126	1,700	.....	70	53
249	48,396	305	10,000	no	no	126	71	.....	.....	9	.....
250	10,000	300	18,200	49	.....	145	68	.....	.....	4	.....
251	12,000	275	.....	.....	.....	127	110	.....	.....	12	.....
252	175,000	300	32,000	no	no	400	1,100	.....	.....	30	1
253	80,000	302	30,000	.....	yes	.....	.....	.....	.....	.....	.....
254	500,000	300	1,000,000	300	.....	3,265	6,250	50,000	25,000	400	.....

FROM MANUFACTURERS.

THEREOF AND MOTORS. TABLE NO, 5,—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c	$ c.	$ c.	$ c.			$	%	%	%	%	
180,000	2,000	9 60	average	9 00	.....	7	5	.....	10	....	10	10	206
6,700	.....	13 80	9 00	.....	.....	1	....	1,200	.....	.....	.....	.....	207
8,000	.....	10 87	average	.....	.....	1	1	2,600	yes	....	.....	.....	208
28,550	220	21 00	12 00	.....	4 40	3	1	3,650	12½	....	12½	12½	209
26,954	.....	15 00	9 90	.....	.....	3	2	13,973	5	....	5	.....	210
3,020	.....	15 00	.....	.....	.....	.....	.....	.....	25	....	....	.....	211
5,200	.....	8 70	average	.....	.....	.....	.....	.....	10	....	.....	.....	212
9,000	.....	12 75	8 25	.....	.....	1	....	350	no	no	.....	.....	213
75,579	.....	18 00	11 00	.....	.....	4	1	9,505	3	....	3	3	214
78,907	both	20 40	13 65	.....	.....	5	1	6,771	7	....	.....	.....	215
86,328	both	18 00	10 05	7 80	5 40	6	4	12,000	5	....	5	.....	216
13,000	.....	10 40	average	.....	.....	1	1	2,000	no	no	.....	.....	217
259,188	.....	4 30	average	.....	.....	40	10	59,327	10	....	.....	.....	218
22,858	.....	15 75	11 25	.....	.....	2	....	2,340	no	no	.....	.....	219
45,026	.....	18 00	10 50	.....	.....	4	2	7,732	no	no	.....	.....	220
5,000	.....	15 00	10 50	.....	.....	1	....	600	no	no	.....	.....	221
114,806	.....	13 23	average	.....	.....	8	1	16,043	yes	....	.....	.....	222
1,000	.....	9 00	.....	.....	.....	.....	.....	.....	no	no	.....	.....	223
74,396	1,050	18 00	6 00	9 00	4 50	14	2	26,860	10	....	10	10	224
12,500	520	15 00	.....	10 00	.....	.....	1	520	no	no	.....	.....	225
150,000	.....	15 00	10 50	.....	.....	14	4	16,000	20	....	20	20	226
38,616	.....	21 40	10 80	.....	.....	2	1	4,100	no	no	.....	.....	227
29,000	850	16 50	9 00	.....	.....	1	2	3,500	5	....	5	.....	228
5,000	.....	.....	.....	.....	.....	1	1	1,600	no	no	no	no	229
10,000	.....	.....	.....	.....	.....	2	....	2,500	yes	....	yes	.....	230
7,300	260	15 00	.....	.....	.....	.....	1	260	10	....	10	.....	231

TOOLS AND DAIRY MACHINERY.—TABLE NO. 6.

11,985	.....	15 00	12 00	.....	.....	6	1	7,843	10	....	10	.....	232
80,000	.....	24 00	10 50	.....	.....	13	7	12,000	10	....	10	10	133
44,459	.....	16 50	9 75	.....	.....	3	1	7,056	10	....	10	10	234
42,600	.....	12 20	average	.....	.....	2	2	5,000	no	no	.....	.....	235
7,077	1,472	18 00	6 75	6 00	3 90	3	1	1,200	5	....	5	5	236
1,200	.....	8 00	average	.....	.....	.....	.....	.....	10	....	10	.....	237
6,214	.....	18 00	13 20	.....	.....	7	9	14,024	10	....	.....	10	238
3,284	.....	13 50	8 10	.....	.....	2	1	2,680	8	....	8	8	239
1,200	.....	12 50	8 50	.....	.....	1	....	800	no	no	.....	.....	240
30,000	both	8 00	average	for	all	3	2	7,373	no	no	.....	.....	241
4,600	1,700	16 50	9 00	7 80	6 00	2	3	6,800	no	no	.....	.....	242
9,662	.....	16 50	11 25	.....	.....	2	1	2,640	10	....	10	.....	243
18,100	.....	14 85	9 00	.....	.....	5	3	5,680	5	....	5	5	244
24,000	.....	19 50	8 25	.....	.....	10	1	12,540	10	....	10	10	245
44,459	.....	15 00	10 50	.....	.....	4	1	7,361	10	....	10	.....	246
138,567	11,818	15 90	10 00	6 30	5 40	11	1	.....	5	....	5	.....	247
37,000	both	16 50	9 00	6 00	4 20	2	1	2,270	no	no	.....	.....	248
3,421	.....	16 50	10 50	.....	.....	.....	.....	.....	10	....	.....	.....	249
1,200	.....	12 00	10 50	.....	.....	1	1	1,630	10	....	10	10	250
4,600	.....	15 00	9 00	.....	.....	1	....	.....	yes	....	.....	.....	251
13,500	400	12 00	9 00	.....	.....	1	1	.....	yes	....	yes	.....	252
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	253
180,000	3,000	18 00	13 50	14 00	.....	13	3	14,400	15	....	15	15	254

RETURNS IN DETAIL

PIANO, ORGAN AND MUSCAL INSTRUMENT

Office No.	Capital employed, including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
255	100,000	305	274,921	17½	.....	556	707	5,840	5,379	110	2
256	150,000	300	175,000	10	.....	649	450	.....	500	75	.....
257	1,000	290	5,300	20	.....	.....	10	160	.....	2	.....
258	50,000	300	125,000	10	.....	365	550	.....	.....	25	1
259	100,000	300	68,778	16	.....	415	659	767	3,352	30	.....
260	17,700	300	24,727	yes	.....	110	136	125	1,636	23	1

WOOD-PULP FACTORIES, PAPER MILLS, STATIONERY

261	1,250,000	279	678,893	12½	.....	2,125	1,900	3,480	480,650	144	57
262	150,000	300	212,000	30	.....	1,200	600	10,000	9,000	70	120
263	350,000	300	300,000	50	.....	900	900	18,000	10,000	77	35
264	3,500	300	8,000	10	.....	10	45	.....	.....	3	7
265	15,000	300	30,000	10	.....	30	138	.....	.....	4	20
266	40,000	305	75,000	.....	.....	268	220	.....	.....	24	34
267	75,000	300	50,000	10	.....	60	120	.....	.....	12	4
268	25,000	300	46,736	20	.....	85	90	.....	2,143	12	.....
269	33,000	300	34,000	13	.....	85	160	1,200	.....	5	22
270	.....	312	75,000	yes	.....	520	650	1,000	1,500	12	25
271	.....	305	.....	yes	.....	.....	.....	.....	.....	4	1
272	331,000	305	140,400	21	.....	179	829	44,777	104,840	30	.....
273	23,000	308	60,000	25	.....	112	266	4,360	.....	8	38
274	100,000	305	154,000	35	.....	300	729	20,181	.....	25	50
275	100,000	300	140,000	75	.....	235	185	2,000	.....	25	15
276	14,000	300	30,000	no	no	70	160	1,500	.....	5	20
277	400,000	305	570,000	1	.....	1,040	5,600	3,800	12,800	80	40
278	250,000	305	450,000	20	.....	.....	250000	125,000	.....	50	100
279	60,000	309	45,000	no	no	350	.....	5,000	.....	21	.....
280	15,000	305	30,000	no	no	70	150	1,500	.....	5	18
281	2,000,000	308	1,568,989	4	.....	6,083	11,815	352,168	17,959	429	.....
282	20,000	300	18,000	.....	.....	160	98	725	.....	7	8

FOUNDRIES AND ROLLING MILLS, BRIDGE AND STRUCTURAL

283	117,100	298	503,488	3½	.....	1,902	1,322	.....	.....	160	.....
284	210,901	297	535,789	22	.....	356	1,469	.....	.....	203	.....
285	696,355	308	1,141,996	39	.....	498	3,789	.....	.....	395	.....
286	8,000	306	5,000	.....	.....	80	100	.....	.....	7	.....
287	19,900	290	8,400	25	.....	44	63	2,700	.....	6	.....
288	1,260,000	....	.....	.....	.....	700	1,880	.....	.....	30	.....
289	6,000	305	9,000	20	.....	78	42	200	.....	8	.....
290	4,000	306	5,000	10	.....	60	20	500	.....	2	.....
291	46,500	300	100,000	25	.....	250	20	10,000	3,500	40	.....
292	200,000	300	150,000	15	.....	150	.....	30,000	.....	40	.....
293	10,000	280	7,000	no	no	85	.....	.....	.....	5	.....
294	108,681	290	201,545	20	.....	367	498	13,000	.....	124	.....
295	40,000	305	34,949	50	.....	149	5,000	5,723	.....	28	.....
296	128,650	303	141,019	16	.....	46	1,094	6,682	.....	33	.....
297	227,218	300	240,000	1	.....	961	75	5,000	120,000	120	.....
298	51,000	311	27,000	32	.....	400	306	.....	8,758	94	.....
299	150,000	300	350,000	20	.....	300	2,000	5,000	.....	90	.....
300	20,000	306	10,000	no	no	63	83	.....	.....	5	.....
301	1,500,000	300	2,000,000	15	.....	7,000	8,000	125,000	200,000	800	.....
302	264,000	365	502,368	19	.....	244	433	18,750	.....	100	.....
303	10,000	340	74,000	15	.....	250	206	1,000	5,000	40	.....
304	250,000	305	172,000	28	.....	.....	.....	20,000	8,000	55	.....
305	183,536	283	138,984	.....	29	711	1,900	1,710	23,234	100	.....
306	300,000	250	181,575	no	no	1,066	1,057	33,431	.....	50	.....

FROM MANUFACTURERS.

FACTORIES.—TABLE No. 7.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
63,899	832	11 60	average	8 30	.....	3	....	7,500	14½	....	14½	14½	255
32,000	.....	8 55	average	.....	.....	2	....	2,500	5	....	5	.....	256
1,015	.....	12 00	9 00	.....	.....	....	....	.....	.....	....	.....	.....	257
17,000	750	16 50	11 00	15 00	.....	4	1	5,500	5	....	5	5	258
16,304	.....	16 50	9 00	.....	.....	2	1	4,016	14	....	.....	.....	259
8,296	300	27 00	18 00	.....	6 00	....	1	300	.....	....	.....	.....	260

FACTORIES.—TABLE No. 8.

73,837	14,873	22 50	10 50	8 25	5 40	9	2	16,015	10	....	10	.....	261
22,000	30,000	12 00	8 00	10 00	6 00	5	3	5,000	10	....	10	10	262
40,000	15,000	20 00	10 00	8 50	5 50	15	7	16,000	10	....	.....	.....	263
3,500	both	12 00	6 00	9 00	3 00	....	....	.....	10	....	.....	.....	264
2,500	5,500	18 00	12 00	9 00	6 00	1	1	1,500	10	....	10	.....	265
12,500	7,500	12 00	10 50	12 00	8 40	1	1	1,000	no	no	.....	.....	266
9,000	1,000	15 00	average	5 00	av	2	1	3,500	yes	....	yes	.....	267
6,055	.....	14 00	8 00	.....	.....	1	1	.....	12	....	12	12	268
3,500	7,500	15 00	9 00	10 50	5 40	1	....	1,000	yes	....	.....	.....	269
5,000	5,000	12 00	6 00	9 00	3 00	4	2	3,500	yes	....	.....	.....	270
3,000	both	12 00	average	for	all	....	....	.....	yes	....	.....	.....	271
15,776	.....	.....	10 80	.....	.....	5	1	10,137	5	....	5	.....	272
17,732	both	15 00	9 50	10 00	4 75	3	....	4,975	yes	....	.....	.....	273
21,494	both	5 73	average	for	all	5	4	6,227	10	....	.....	10	274
15,000	both	18 00	12 00	9 00	6 00	2	1	4,000	15	....	.....	.....	275
2,800	4,400	15 00	8 00	8 00	4 00	no	no	.....	.....	....	.....	.....	276
62,000	16,500	18 00	10 00	9 00	5 00	6	1	8,500	1½	....	1½	1½	277
25,000	35,000	40 00	10 00	10 00	5 25	....	....	.....	5	....	5	5	278
12,000	.....	15 00	10 50	.....	.....	3	....	6,000	10	....	10	.....	279
3,000	4,500	8 00	3 50	.....	.....	....	....	.....	no	no	.....	.....	280
303,468	.....	.....	.....	.....	.....	16	4	36,260	10	....	10	10	281
6,500	both	13 00	.....	7 00	4 00	1	1	1,500	11	....	11	11	282

IRON WORKS.—TABLE No. 9.

84,277	.....	10 51	average	.....	.....	5	....	4,070	.....	....	.....	.....	283
103,545	.....	10 20	average	.....	.....	9	....	6,720	.....	....	.....	.....	284
228,576	.....	11 60	average	.....	.....	7	1	8,520	.....	....	.....	.....	285
3,150	.....	10 50	7 50	.....	.....	....	....	.....	.....	....	.....	.....	286
1,593	.....	16 50	9 00	.....	.....	....	....	.....	10	....	10	10	287
17,235	.....	11 50	average	.....	.....	3	1	11,000	no	no	.....	.....	288
4,300	.....	13 50	9 75	.....	.....	1	....	.....	15	....	15	.....	289
1,224	.....	12 00	.....	.....	.....	....	....	.....	10	....	.....	.....	290
15,360	.....	17 25	11 55	.....	.....	2	1	5,400	10	....	10	10	291
35,000	.....	24 00	12 00	.....	.....	3	1	6,000	no	no	.....	.....	292
2,800	.....	15 00	10 50	.....	.....	....	....	.....	.....	....	.....	.....	293
87,446	.....	18 00	10 00	.....	.....	....	....	.....	9½	....	.....	.....	294
17,679	.....	21 00	14 25	.....	.....	1	1	1,700	yes	....	.....	.....	295
15,277	.....	16 50	12 00	.....	.....	3	3	5,433	6	....	6	6	296
71,000	.....	18 45	7 95	.....	.....	12	3	13,084	6	....	6	6	297
42,392	.....	8 67	average	.....	.....	8	2	15,269	10	....	10	10	298
45,000	.....	10 00	average	.....	.....	3	2	4,000	no	no	.....	.....	299
2,000	.....	9 00	average	.....	.....	....	....	.....	no	no	.....	.....	300
500,000	.....	12 50	average	.....	.....	50	10	.....	yes	....	.....	.....	301
65,282	.....	16 50	12 00	.....	.....	8	1	16,520	124	....	12½	12½	302
31,000	.....	15 00	average	.....	.....	3	....	3,600	10	....	10	10	303
36,000	.....	18 75	13 80	.....	.....	9	3	24,000	10	....	.....	.....	304
59,090	.....	15 60	9 60	.....	.....	11	1	15,555	.....	....	.....	.....	305
21,461	.....	24 00	12 00	.....	.....	3	....	1,500	no	no	.....	.....	306

RETURNS IN DETAIL

FOUNDRIES AND ROLLING MILLS, BRIDGE AND STRUCTURAL

Office No.	Capital employed including plant.	No. of days in operation during 1911.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
307	6,000	300	12,000	no	no	131	129	.....	.....	7	.....
308	37,500	308	36,500	8	.....	360	175	.....	.....	20	.....
309	160,000	275	125,000	12½	.....	256	650	10,000	.....	68	.....
310	90,000	305	60,000	no	no	639	44,000	5,000	.....	50	.....
311	200,000	300	140,866	15	.....	217	920	50,000	77,524	45	.....
312	900,000	300	970,000	30	.....	1,831	3,486	53,500	530,000	560	40
313	50,000	303	70,000	no	no	88	262	4,000	6,000	38	.....
314	10,000	313	6,000	.....	35	40	.....	100	.....	5	.....
315	54,000	290	69,800	16	.....	425	450	.....	24,000	45	.....

STOVE MANUFACTURERS, HOT AIR FURNACES

316	24,000	280	18,000	30	.....	100	208	200	600	17	.....
317	350,000	295	233,306	74	.....	1,081	1,800	100,000	.....	250	.....
318	22,795	305	41,388	79	.....	20	169	363	27,019	15	.....
319	500,000	265	600,000	15	.....	1,170	2,194	6,000	.....	335	.....
320	25,000	265	45,000	no	no	171	150	.....	.....	18	.....
321	72,000	290	85,000	60	.....	230	305	6,140	.....	55	.....
322	86,000	300	60,000	no	no	332	1,355	3,000	.....	40	.....
323	50,000	305	90,000	no	no	400	1,400	.....	10,000	23	.....
324	50,000	305	100,000	10	.....	200	450	.....	.....	40	.....
325	120,000	270	123,000	20	.....	212	390	2,500	103,760	72	.....
326	100,000	290	166,000	2	.....	1,627	1,965	.....	3,800	120	.....
327	8,000	300	7,000	5	.....	60	50	.....	.....	5	2
328	60,000	300	35,000	36	.....	125	250	600	.....	22	.....
329	85,000	305	70,000	12	.....	1,090	700	5,000	.....	55	.....
330	60,000	300	100,000	25	.....	600	700	15,000	30,000	70	3
331	6,000	305	9,000	no	no	10	49	.....	300	8	.....
332	500,000	290	285,000	20	.....	2,400	3,750	8,000	22,000	245	.....
333	200,000	300	188,603	15	.....	450	1,378	60,000	884,828	125	.....
334	.....	305	.....	5	.....	47	500	.....	.....	44	.....
335	188,000	285	160,000	12	.....	107	900	50,000	65,800	120	1
336	240,000	300	140,230	40	.....	250	1,605	13,574	33,750	80	.....

ENGINES, BOILERS AND MACHINERY FACTORIES; ENGINEERS

337	800,000	300	600,000	no	no	2,052	8,500	.....	.....	320	.....
338	101,000	300	100,000	10	.....	965	900	.....	.....	75	.....
339	4,000	270	2,100	no	no	26	35	.....	.....	3	.....
340	59,150	305	45,926	no	no	398	440	.....	.....	25	.....
341	14,500	310	7,000	.....	.....	158	.....	1,000	.....	8	.....
342	150,000	280	125,000	25	.....	156	635	2,000	.....	65	.....
343	35,700	300	19,000	no	no	130	284	.....	1,300	10	.....
344	25,000	312	24,000	20	.....	49	86	1,000	947	9	.....
345	1,000	300	.....	no	no	25	.....	.....	.....	.....	.....
346	77,712	308	56,359	3	.....	117	105	.....	5,676	30	.....
347	18,000	305	25,000	10	.....	135	425	.....	.....	27	.....
348	65,000	300	43,050	no	no	250	504	.....	.....	20	.....
349	12,000	300	20,686	20	.....	52	20	.....	8,080	13	.....
350	200,000	300	150,000	no	no	350	475	.....	18,000	75	.....

FROM MANUFACTURERS.

IRON WORKS.—TABLE No. 9.—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
4,680	.....	13 70	average	.....	.....	2	....	1,040	.....	.....	.....	.....	307
10,200	.....	18 00	6 75	.....	.....	2	....	1,560	20	....	20	20	308
33,000	.....	18 00	11 25	.....	.....	6	1	5,240	10	....	10	10	309
36,000	.....	21 64	13 20	.....	.....	2	....	2,600	12	....	12	12	310
32,850	.....	14 60	average	.....	.....	3	1	3,972	yes	....	.....	.....	311
312,386	14,563	17 25	9 75	10 50	4 50	29	9	28,326	7½	....	7½	.....	312
16,040	.....	16 00	10 50	.....	.....	5	1	6,800	no	no	.....	.....	313
2,860	.....	11 00	.....	.....	.....	....	....	.....	10	....	10	.....	314
37,750	.....	21 00	12 00	.....	.....	4	1	.....	8	....	8	8	315

AND HEATING APPARATUS.—TABLE No. 10.

7,800	.....	10 00	average	.....	.....	2	....	1,600	yes	....	yes	.....	316
123,113	.....	19 50	12 00	.....	.....	18	3	36,000	10	....	10	.....	317
4,236	.....	10 50	verage	.....	.....	2	1	1,482	no	no	.....	.....	318
180,000	.....	25 00	10 50	.....	.....	11	4	20,000	5	....	5	5	319
7,300	.....	13 50	9 75	.....	.....	2	....	1,700	10	....	10	.....	320
28,571	.....	21 75	9 60	.....	.....	2	1	4,024	6	....	6	.....	321
25,000	.....	18 00	.....	.....	.....	3	....	4,400	.....	....	.....	.....	322
22,000	.....	20 00	average	.....	.....	6	....	7,000	no	no	.....	.....	323
27,000	.....	18 00	11 25	.....	.....	3	2	5,000	10	....	10	.....	324
43,419	.....	13 00	average	.....	.....	2	2	3,500	5	....	5	.....	325
69,400	.....	12 30	average	.....	.....	8	1	7,500	5	....	.....	.....	326
2,500	500	13 50	9 00	.....	4 50	....	....	.....	no	no	.....	.....	327
13,250	.....	.....	.....	.....	.....	2	....	2,100	no	no	.....	.....	328
35,000	.....	18 00	12 00	.....	.....	5	1	4,500	7	....	10	5	329
23,000	1,000	19 50	12 00	6 67	.....	2	2	5,000	10	....	.....	.....	330
4,160	.....	13 20	7 80	.....	.....	2	....	1,500	no	no	.....	.....	331
114,700	.....	18 00	10 50	.....	.....	15	3	23,700	10	....	10	10	332
69,019	.....	16 50	12 00	.....	.....	2	3	5,165	15	....	15	15	333
.....	.....	.....	.....	.....	.....	5	....	.....	yes	....	yes	.....	334
56,000	both	13 50	.....	.....	.....	4	1	9,000	5	....	5	.....	335
58,598	.....	21 50	15 00	.....	.....	4	1	6,870	10	....	10	.....	336

AND MACHINE SHOPS.—TABLE No. 11.

190,472	.....	18 00	12 00	.....	.....	33	....	50,000	no	no	.....	.....	337
19,000	.....	14 25	10 20	.....	.....	5	1	10,000	17	....	17	17	338
920	.....	.....	9 00	.....	.....	....	....	.....	no	no	.....	.....	339
16,242	.....	19 50	12 00	.....	.....	2	....	1,780	10	....	10	10	340
7,500	.....	19 00	average	.....	.....	1	....	600	no	no	.....	.....	341
24,600	.....	16 50	12 00	.....	.....	5	2	4,000	15	....	15	.....	342
4,200	.....	8 40	average	.....	.....	....	1	700	.....	9	.....	.....	343
4,442	.....	24 00	15 00	.....	.....	1	....	1,860	no	no	.....	.....	344
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	345
15,392	.....	16 50	12 00	.....	.....	3	....	2,630	5	....	5	.....	346
12,000	.....	15 75	9 45	.....	.....	1	1	.....	.....	....	.....	.....	347
9,000	.....	14 40	9 00	.....	.....	3	....	3,100	7	....	7	.....	348
5,058	.....	8 00	average	.....	.....	1	....	520	3	....	3	3	349
30,000	.....	16 50	10 50	.....	.....	8	2	12,000	10	....	10	.....	350

RETURNS IN DETAIL

Engines, Boilers and Machinery Factories; Engineers

Office No.	Capital employed including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
351	23,200	305	51,909	.....	.....	271	255	.....	.....	10	.....
352	353,000	305	260,000	60	.....	1,700	1,650	14,000	.....	135	.....
353	75,000	305	150,000	10	.....	194	350	5,000	.....	40	.....
354	10,000	305	15,000	no	no	26	400	.....	.....	10	.....
355	20,000	292	23,500	no	no	.....	148	.....	.....	12	.....
356	2,500	305	6,500	5	.....	80	30	.....	.....	3	.....
357	600,000	305	350,000	.....	.....	.....	.....	.....	.....	185	.....
358	60,000	310	45,000	no	no	310	240	700	3,300	18	.....
359	400,000	300	190,000	.....	.....	.....	.....	.....	.....	95	.....
360	723,000	300	845,000	20	.....	4,500	1,500	60,000	95,000	460	.....
361	75,000	313	25,000	yes	.....	66	232	.....	.....	6	.....
362	30,000	300	19,231	.....	5	43	336	.....	.....	15	1
363	40,000	306	20,000	.....	15	125	56	1,200	.....	6	.....
364	67,650	305	166,348	7	.....	629	1,029	.....	24,695	70	.....
365	60,000	300	67,000	10	.....	353	377	.....	.....	50	.....
366	8,850	300	11,000	10	.....	40	80	200	500	15	.....
367	20,000	200	.....	.....	25	68	117	800	.....	5	1
368	42,000	300	21,348	.....	.....	110	125	.....	.....	21	1
369	5,000	312	5,000	10	.....	24	25	650	.....	3	1
370	350,000	300	71,209	30	.....	224	1,336	.....	13,888	48	4
371	60,000	300	100,000	no	no	.....	800	500	.....	60	.....
372	26,195	300	17,738	.....	18	244	493	.....	2,392	10	.....
373	79,400	312	90,000	.....	.....	268	1,500	15,059	.....	50	2
374	72,000	305	62,969	20	.....	98	346	1,200	.....	25	.....
375	6,000	200	3,500	20	.....	40	20	.....	.....	4	.....
376	20,000	305	.....	10	.....	97	30	300	.....	11	.....
377	17,250	305	23,804	10	.....	56	.....	.....	.....	4	1
378	23,200	305	51,909	.....	.....	271	255	.....	.....	18	.....
379	4,000	305	.....	25	.....	48	45	100	.....	.....	.....
380	18,000	312	18,000	no	no	306	191	.....	.....	16	.....
381	3,000	290	4,500	yes	.....	31	.....	150	9,000	2	.....
382	8,500	312	.....	no	no	183	.....	.....	.....	4	.....
383	35,000	305	40,000	8	.....	362	186	495	.....	21	.....
384	25,000	320	9,728	.....	10	75	116	1,000	.....	7	1
385	45,000	306	31,589	.....	20	212	428	550	.....	33	.....
386	650,000	300	420,000	25	.....	540	3,785	30,000	230,000	100	27
387	30,000	310	28,000	20	.....	44	10	700	1,020	7	.....
388	1,000	300	.....	.....	.....	.....	20	.....	.....	.....	.....
389	17,652	300	5,605	.....	.....	86	130	475	.....	6	1
390	4,000	305	.....	.....	.....	75	15	.....	.....	4	1
391	3,800	288	9,000	.....	.....	30	.....	100	4,034	6	.....
392	15,000	280	7,000	.....	.....	264	.....	.....	.....	10	.....
393	.....	305	.....	10	.....	.....	.....	.....	.....	5	2
394	6,000	305	5,000	.....	.....	36	84	.....	2,000	.....	.....
395	70,000	300	45,000	25	.....	308	100	18,000	.....	35	1
396	.....	305	116,000	20	.....	600	600	5,000	.....	40	2
397	40,000	300	18,000	.....	.....	240	84	.....	2,740	14	.....
398	1,500	300	.....	.....	.....	27	.....	.....	.....	.....	.....
399	63,659	300	47,806	10	.....	489	375	2,621	4,409	38	.....

FROM MANUFACTURERS.

AND MACHINE SHOPS.—TABLE No. 11—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
9,208	.....	18 00	10 20	.....	.....	3	1	6,272	.....	.....	.....	.....	351
92,908	.....	13 75	average	.....	.....	13	.....	22,834	no	no	.....	.....	352
21,518	.....	16 50	15 00	.....	.....	3	1	4,400	10	.....	10	10	353
9,300	.....	18 60	average	.....	.....	.....	1	230	5	.....	.....	.....	354
9,460	.....	19 20	10 50	.....	.....	.....	.....	.....	no	no	.....	.....	355
2,900	.....	19 50	18 00	.....	.....	3	.....	2,100	7	.....	.....	.....	356
109,785	.....	18 00	10 80	.....	.....	6	3	12,536	.....	.....	.....	.....	357
12,500	.....	18 00	12 00	.....	.....	3	.....	2,200	.....	.....	.....	.....	358
65,000	.....	13 70	average	.....	.....	.....	.....	.....	.....	.....	.....	.....	359
211,000	.....	12 60	average	.....	.....	45	12	46,000	7	.....	7	4	360
2,653	.....	18 00	12 00	.....	.....	2	1	4,685	yes	.....	.....	.....	361
6,058	365	8 08	average	7 20	.....	.....	.....	.....	.....	.....	.....	.....	362
3,000	.....	30 00	15 00	.....	.....	2	.....	1,500	15	.....	15	15	363
55,408	.....	15 83	average	.....	.....	2	.....	1,318	10	.....	10	10	364
28,034	.....	16 50	9 60	.....	.....	2	1	3,916	9	.....	9	9	365
7,800	.....	16 50	average	.....	.....	1	1	2,200	10	.....	10	10	366
2,000	both	18 00	12 00	.....	.....	1	1	1,400	10	.....	10	10	367
10,391	both	16 50	12 00	.....	.....	1	1	1,976	10	.....	10	.....	368
2,100	600	15 00	.....	12 00	.....	.....	1	50	25	.....	.....	.....	369
26,768	1,768	19 50	12 00	13 00	7 00	3	4	4,200	15	.....	15	.....	370
40,000	.....	15 00	10 50	.....	.....	3	2	5,000	20	.....	20	20	371
5,252	.....	14 40	4 80	.....	.....	2	1	2,661	.....	9	.....	.....	372
28,000	.....	10 35	average	.....	.....	4	2	4,800	15	.....	.....	.....	373
1,275	.....	16 50	10 50	.....	.....	3	.....	4,000	no	no	.....	.....	374
2,000	.....	18 00	10 50	.....	.....	2	.....	2,000	.....	.....	.....	.....	375
6,600	.....	16 50	8 25	.....	.....	.....	.....	.....	10	.....	10	10	376
3,860	260	15 00	10 50	.....	5 20	2	1	2,460	10	.....	.....	10	377
9,208	.....	21 00	6 00	.....	.....	3	1	6,373	.....	.....	.....	.....	378
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	379
7,500	.....	15 75	10 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	380
916	.....	16 50	10 50	.....	.....	.....	.....	.....	10	.....	.....	.....	381
2,310	.....	13 50	10 00	.....	.....	.....	.....	.....	12½	.....	.....	.....	382
18,250	.....	23 25	14 25	.....	.....	2	.....	1,300	15	.....	15	.....	383
4,864	480	22 80	12 00	9 50	.....	1	1	1,920	7	.....	7	7	384
15,196	.....	16 50	9 60	.....	.....	1	1	900	no	no	.....	.....	385
62,000	13,000	21 00	12 00	10 50	7 50	14	5	28,500	10	.....	10	10	386
2,660	.....	12 00	6 00	.....	.....	1	1	1,100	yes	.....	.....	.....	387
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	388
4,052	300	17 25	12 00	.....	6 00	1	1	1,200	.....	.....	.....	.....	389
2,500	305	16 50	12 00	6 10	.....	.....	1	350	10	.....	10	10	390
4,305	.....	18 00	13 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	391
.....	.....	18 00	5 00	.....	.....	1	.....	900	yes	.....	.....	.....	392
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	393
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	394
18,000	150	15 00	10 50	.....	3 00	1	1	1,650	5	.....	5	.....	395
40,000	1,000	18 00	13 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	396
5,700	.....	16 50	12 00	.....	.....	3	.....	1,800	.....	.....	.....	.....	397
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	398
19,740	.....	15 60	12 00	.....	.....	1	.....	700	10	.....	10	.....	399

RETURNS IN DETAIL

METALLIC ROOFING, BOLTS, NUTS AND

Office No.	Capital employed, including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year. Increased.	Production during year. Decreased.	Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only. Male.	Total No. of employees, wage-earners only. Female.
	$		$	%	%	$	$	$	$		
400	10,000	300	20,000	25	.....	.....	70	.....	.....	1	.....
401	17,500	305	20,000	20	.....	50	67	2,750	.....	11	5
402	80,000	300	70,000	16	.....	325	13,000	.....	.....	42	6
403	100,000	305	100,000	12½	.....	237	295	.....	.....	25	.....
404	70,000	306	44,000	no	no	335	50	1,700	14,200	26	.....
405	140,000	313	148,000	30	.....	585	1,500	7,000	.....	140	15
406	8,000	305	.....	10	.....	75	33	1,500	.....	9	.....
407	330,000	300	644,510	no	no	2,650	2,470	8,000	.....	325	.....
408	.....	312	.....	no	no	25	25	150	.....	.....	.....
409	26,500	309	32,615	12	.....	96	25	.....	1,436	10	1
410	100,000	306	120,000	30	.....	629	102	.....	.....	35	3
411	4,000	305	5,000	no	no	50	15	.....	.....	5	.....
412	40,000	300	70,000	10	.....	80	700	.....	.....	15	1
413	.....	300	130,000	yes	.....	.....	.....	.....	.....	70	.....
414	9,000	300	.....	no	no	16	50	.....	.....	5	.....
415	10,000	305	25,000	25	.....	50	40	1,000	.....	6	.....
416	18,000	300	44,000	10	.....	136	268	4,000	.....	30	.....
417	23,629	300	103,011	18	.....	185	345	.....	5,100	70	.....
418	3,000	300	10,000	.....	25	50	.....	100	.....	4	.....
419	85,000	300	60,000	10	.....	350	1,500	4,000	3,000	45	5
420	33,446	305	65,747	8	.....	29	276	15	839	12	.....
421	125,000	305	125,000	25	.....	256	450	.....	.....	31	.....
422	.....	280	834,000	5	.....	.....	.....	1,500	.....	350	30
423	15,000	300	12,000	25	.....	70	65	3,000	.....	4	.....
424	200,000	306	482,108	80	.....	423	2,366	79,294	43,939	98	23

WIRE FENCE, WIRE ROPE AND

425	54,250	200	27,196	.....	.....	177	279	.....	6,252	6	.....
426	266,000	305	620,000	yes	.....	91	687	3,500	.....	107	.....
427	150,000	300	25,000	10	.....	30	423	6,000	.....	15	.....
428	40,000	310	60,000	40	.....	200	.....	5,000	.....	40	.....
429	20,000	300	25,000	20	.....	50	84	1,000	.....	20	5
430	150,000	200	250,000	no	no	300	350	2,000	10,000	30	.....
431	43,269	309	221,647	31	.....	16	852	.....	50,090	17	.....
432	150,000	250	275,000	no	no	705	250	.....	.....	30	.....
433	4,500	300	20,000	20	.....	185	.....	200	.....	10	.....
434	30,000	300	100,000	20	.....	280	440	600	2,400	12	1
435	.....	275	700,000	5	.....	4,596	4,836	.....	.....	300	.....
436	8,000	300	22,000	15	.....	105	36	700	.....	5	1
437	190,000	300	380,000	5	.....	92	795	.....	94,220	70	.....
438	4,500	300	20,000	20	.....	185	.....	200	.....	10	.....
439	7,800	300	.....	.....	.....	.....	.....	.....	.....	.....	.....
440	75,000	300	60,000	no	no	350	550	27,500	7,500	50	.....
441	9,000	300	24,000	2	.....	81	75	300	.....	10	.....
442	61,363	308	41,545	.....	17	239	282	.....	.....	19	.....
443	150,000	200	250,000	no	no	300	350	2,000	10,000	35	.....
444	116,701	305	152,691	2½	.....	321	768	1,689	20,340	.....	.....

FROM MANUFACTURERS.

LIGHT IRONWARE.—TABLE NO. 12.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%		%	%	
400	.....	10 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	400
5,600	both	15 00	8 25	7 50	6 00	.....	.....	.....	no	no	.....	.....	401
20,000	1,800	16 50	10 50	6 00	.....	4	1	2,400	15	....	.....	.....	402
10,342	.....	9 00	average	.....	.....	12	5	11,300	6	....	6	6	403
15,729	.....	11 86	average	.....	.....	.....	.....	.....	.....	....	.....	.....	404
54,000	7,000	18 00	9 45	9 00	5 40	3	3	6,000	20	....	.....	.....	405
5,500	.....	13 50	10 50	.....	.....	.....	.....	.....	10	....	10	.....	406
173,300	.....	21 00	10 80	.....	.....	13	3	27,500	yes	....	yes	yes	407
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	408
8,933	572	18 00	13 20	11 00	.....	2	1	2,200	12½	....	12½	.....	409
18,751	973	25 20	12 00	6 60	.....	1	1	6,000	10	....	10	10	410
2,500	.....	15 00	6 00	.....	.....	.....	.....	.....	no	no	.....	.....	411
10,000	500	19 50	12 00	10 00	.....	2	1	2,000	10	....	10	10	412
30,000	.....	8 57	average	.....	.....	.....	.....	.....	.....	....	.....	.....	413
.....	.....	15 00	.....	.....	.....	.....	.....	.....	5	....	.....	.....	414
4,000	.....	18 00	12 00	.....	.....	.....	1	300	20	....	20	.....	415
14,000	.....	19 20	12 00	.....	.....	3	1	2,500	yes	....	yes	yes	416
40,850	.....	24 00	12 00	.....	.....	5	....	6,000	no	no	.....	.....	417
2,000	.....	20 00	.....	.....	.....	4	....	.....	10	....	.....	.....	418
15,000	3,000	15 00	10 50	7 50	6 00	2	1	3,500	10	....	.....	.....	419
6,790	.....	18 00	10 20	.....	.....	3	....	2,950	no	no	.....	.....	420
15,205	.....	10 00	.....	.....	.....	12	5	23,750	10	....	10	10	421
170,774	8,452	16 50	10 50	6 00	5 40	17	5	14,000	7½	....	.....	.....	422
2,500	.....	12 00	.....	.....	.....	1	....	1,200	10	....	.....	.....	423
52,566	6,973	10 72	average	6 06	avg.	6	2	6,671	no	no	.....	.....	424

WIRE CLOTH FACTORIES.—TABLE NO. 13.

2,204	.....	13 80	10 50	.....	.....	3	1	3,374	yes	....	.....	.....	425
78,500	.....	19 50	11 50	.....	.....	11	8	18,160	12½	....	.....	.....	426
3,800	.....	16 50	10 50	.....	.....	3	1	5,100	10	....	10	10	427
15,000	.....	21 00	9 00	.....	.....	.....	1	500	10	....	10	.....	428
8,500	1,500	12 00	9 00	6 00	.....	1	1	1,850	10	....	10	10	429
14,000	.....	16 50	10 50	.....	.....	5	3	10,000	no	no	.....	.....	430
9,423	.....	15 00	10 50	.....	.....	3	1	7,769	5	....	5	5	431
16,000	.....	18 00	12 75	.....	.....	4	2	8,500	yes	....	.....	.....	432
4,000	.....	18 00	12 00	.....	.....	.....	.....	.....	10	....	10	.....	433
5,000	500	15 00	10 50	6 00	.....	3	1	4,000	.....	....	.....	.....	434
176,989	.....	12 83	average	.....	.....	15	5	25,111	yes	....	.....	.....	435
2,700	350	10 80	average	7 00	.....	.....	.....	.....	10	....	10	10	436
47,000	.....	18 00	12 00	.....	.....	10	2	12,184	5	....	5	5	437
4,000	.....	15 78	average	.....	.....	.....	.....	.....	10	....	10	.....	438
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	439
30,000	.....	22 50	13 80	.....	.....	10	2	10,000	yes	....	.....	.....	440
5,200	.....	15 00	8 50	.....	.....	.....	.....	.....	yes	....	.....	.....	441
11,926	.....	19 50	6 00	.....	.....	1	....	936	no	no	.....	.....	442
14,000	.....	16 50	10 50	.....	.....	5	3	10,000	no	no	.....	.....	443
38,457	.....	14 88	9 42	.....	.....	4	3	5,731	5	....	5	5	444

RETURNS IN DETAIL

Brass and Copperware Factories and

Office No.	Capital employed including plant.	No. of days in operation during 1911.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
445	73,000	305	61,400	9	.....	112	450	2,500	.....	45	.....
446	26,000	250	103,600	no	no	167	416	.....	2,460	32	.....
447	48,346	275	92,125	yes	.....	154	287	.....	.....	30	.....
448	60,000	300	113,000	.....	.....	.....	.....	.....	.....	61	6
449	10,000	306	8,000	25	.....	.....	150	.....	.....	7	.....
450	62,600	304	82,060	15	.....	284	453	.....	.....	50	11
451	10,000	300	24,000	3	.....	7	40	2,000	18,000	9	.....
452	450,000	313	231,639	14	.....	1,892	3,890	17,161	8,370	165	.....
453	17,000	305	20,000	.....	.....	.....	.....	.....	.....	5	5
454	75,000	305	350,000	29½	.....	480	700	3,000	29,246	100	.....
455	67,600	300	148,899	.....	9	516	2,283	5,075	71,058	100	1
456	10,000	305	27,116	20	.....	.....	95	.....	2,534	10	.....
457	85,791	308	157,816	69	.....	37	148	.....	5,361	11	.....
458	113,000	300	207,500	yes	.....	20	1,300	4,000	7,500	100	.....
459	25,750	305	37,126	1½	.....	110	248	.....	.....	25	3
460	262,336	300	568,272	22½	.....	252	480	56,127	500,000	250	.....
461	500,000	305	500,000	yes	.....	1,393	2,000	15,000	.....	200	.....
462	7,800	300	24,038	no	no	100	149	.....	.....	3	17
463	85,791	308	157,816	69	.....	37	148	.....	5,350	11	.....

Silver and Platedware Factories

464	325,977	300	180,848	.....	4	870	1,060	2,388	16,260	100	10
465	4,259	305	15,067	yes	.....	21	31	74	.....	10	.....
466	30,000	300	52,000	5	.....	150	150	1,000	500	22	3
467	18,109	206	32,190	5	.....	30	194	100	.....	11	2
468	373,357	297	295,829	8½	.....	478	1,782	10,000	.....	94	13
469	8,000	300	4,000	.....	25	60	30	.....	.....	3	1
470	556,618	298	459,539	19	.....	854	827	17,520	22,913	105	38
471	238,781	305	300,241	18	.....	1,436	1,066	.....	9,932	120	20

Woollens, Cottons, Linens and

472	.....	278	357,199	no	no	683	500	.....	.....	85	170
473	20,000	300	5,000	no	no	60	.....	.....	.....	5	.....
474	50,000	300	100,000	20	.....	189	550	2,500	.....	25	15
475	2,500	200	1,545	3	.....	25	3	.....	.....	2	.....
476	100,000	300	100,000	40	.....	400	800	20,000	.....	25	25
477	3,000	300	10,914	20	.....	45	25	.....	.....	3	3
478	25,000	286	28,000	2	.....	173	.....	1,500	.....	7	9
479	800	50	100	no	no	29	.....	.....	.....	.....	.....
480	35,000	300	85,000	10	.....	45	200	2,000	.....	25	4
481	10,000	200	12,000	.....	.....	150	200	.....	.....	50	1
482	100,000	300	80,000	10	.....	100	800	6.000	.....	30	10
483	6,000	200	4,300	.....	.....	60	80	.....	.....	20	5
484	2,000,000	305	1,822,000	6	.....	10,200	1,900	50,000	.....	597	426
485	800,000	292	760,000	21	.....	3,718	402	11,376	.....	125	185
486	50,000	280	150,000	no	no	200	300	300	.....	9	.....
487	75,000	300	70,000	.....	.....	500	500	.....	.....	21	15
488	10,500	305	24,000	4	.....	110	140	500	.....	5	3

FROM MANUFACTURERS.

PLUMBERS' SUPPLIES.—TABLE No. 14.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c			$	%	%	%	%	
22,269	.....	18 00	12 00	.....	.....	2	2	3,200	15	....	15	.....	445
16,404	.....	16 00	8 25	.....	.....	1	....	1,200	no	no	.....	.....	446
22,682	.....	18 00	11 25	.....	.....	1	2	4,140	yes	....	.....	.....	447
37,982	both	18 00	12 00	.....	5 40	4	4	.....	10	....	10	.....	448
4,200	.....	18 00	12 00	.....	.....	1	....	750	no	no	.....	.....	449
25,254	2,472	17 25	7 50	6 00	.....	1	2	1,960	4	....	4	.....	450
3,000	.....	21 50	15 00	.....	.....	....	....	.....	3	....	3	3	451
75,199	.....	17 25	11 25	.....	.....	33	7	26,120	10	....	10	.....	452
2,752	1,768	15 00	10 00	7 00	5 00	1	1	1,928	no	no	.....	.....	453
47,959	.....	21 00	12 00	.....	.....	8	2	12,776	10	....	10	10	454
67,019	720	24 00	13 50	14 40	.....	5	1	7,459	yes	....	.....	.....	455
6,404	.....	21 00	12 00	.....	.....	2	1	3,456	no	no	.....	.....	456
6,684	.....	25 50	13 50	.....	.....	3	1	6,554	no	no	.....	.....	457
45,000	.....	19 50	12 00	.....	.....	16	....	15,500	10	....	10	.....	458
15,264	1,040	12 00	average	6 80	aver.	4	1	4,819	yes	....	.....	.....	459
124,569	.....	16 50	12 00	.....	.....	9	11	15,370	10	....	.....	.....	460
125,000	.....	24 00	12 00	.....	.....	7	3	.....	yes	....	.....	.....	461
1,800	6,900	18 00	12 00	14 50	7 50	1	....	1,500	.....	....	.....	.....	462
6,684	.....	18 90	13 80	.....	.....	3	1	1,654	.....	....	.....	.....	463

JEWELRY FACTORIES.—TABLE No. 15.

66,636	both	17 25	9 75	8 00	5 00	10	6	23,363	6½	....	6½	7	464
5,919	.....	8 00	average	.....	.....	.....	.....	.....	yes	....	.....	.....	465
9,000	800	20 00	5 00	7 00	.....	1	2	2,100	5	....	5	5	466
7,498	604	15 00	4 00	6 00	.....	.....	.....	.....	16	....	16	.....	467
64,148	both	12 00	average	for	all	3	1	6,040	yes	....	.....	.....	468
1,800	200	13 00	10 00	.....	5 00	.....	.....	.....	.....	....	.....	.....	469
80,602	9,975	17 50	12 50	9 00	7 00	4	3	16,246	17	....	17	.....	470
65,908	5,651	20 00	9 00	9 00	4 50	6	7	10,872	yes	....	.....	.....	471

YARNS.—TABLE No. 16.

26,000	34,000	10 05	7 50	8 25	4 20	2	1	3,700	5	....	5	.....	472
1,500	.....	6 00	.....	.....	.....	.....	.....	.....	no	no	.....	.....	473
12,000	both	16 50	7 50	7 50	4 50	.....	.....	.....	yes	....	.....	.....	474
752	.....	9 00	.....	.....	.....	.....	.....	.....	no	no	.....	.....	475
17,000	both	16 50	10 50	6 60	4 50	3	1	2,500	.....	....	.....	.....	476
1,500	940	10 00	.....	7 00	.....	.....	.....	.....	5	....	.....	.....	477
2,710	2,530	13 50	8 25	5 10	.....	.....	.....	.....	15	....	15	.....	478
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	479
10,000	both	7 80	.....	10 50	.....	.....	.....	.....	no	no	.....	.....	480
8,000	.....	.....	5 00	.....	.....	.....	.....	.....	yes	....	.....	.....	481
10,000	3,500	13 50	9 00	9 75	6 75	1	1	3,300	7½	....	7½	.....	482
3,250	350	10 50	7 50	7 50	.....	.....	.....	.....	no	no	.....	.....	483
260,046	126249	8 50	.....	5 75	.....	12	1	14,300	7½	....	7½	7½	484
63,903	63,900	12 70	8 00	7 60	5 00	3	1	4,500	9½	....	9½	9½	485
5,000	.....	13 00	.....	.....	.....	.....	.....	.....	10	....	10	10	486
14,500	both	15 00	7 10	.....	.....	2	....	3,000	yes	no	.....	.....	487
3,224	950	22 00	10 00	6 75	5 00	....	....	.....	yes	....	.....	.....	488

RETURNS IN DETAIL

WOOLLENS, COTTONS, LINENS AND

Office No.	Capital employed, including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
489	100,000	300	110,000	no	no	492	930	.....	14,000	55	45
490	25,000	275	.....	yes	.....	315	5,000	.....	.....	5	5
491	15,000	150	7,500	.....	25	66	320	300	.....	4	3
492	.....	300	2,500	no	no	111	75	200	.....	2	.....
493	9,500	245	7,500	.....	.....	45	56	75	.....	20	8
494	40,000	300	50,000	no	no	413	400	.....	.....	14	12
495	297,950	305	409,832	7	.....	1,130	990	15,000	8,000	125	45
496	225,000	300	375,000	25	.....	2,000	2,200	20,000	45,500	150	120
497	350,000	300	.....	20	.....	300	2,000	6,000	.....	100	50
498	100,000	300	.....	25	.....	189	400	500	.....	22	8
499	30,000	300	.....	25	.....	347	400	500	500	10	24
500	13,000	300	20,000	no	no	80	80	600	.....	6	7
501	15,000	300	5,000	yes	.....	32	15	500	.....	1	.....
502	80,000	300	36,000	yes	.....	75	360	500	500	10	23
503	20,000	300	25,000	50	.....	200	135	6,000	.....	4	15
504	32,000	300	48,000	25	.....	112	274	348	2,784	10	11
505	10,000	300	20,000	10	.....	75	90	500	100	5	.....
506	6,000	240	10,000	.....	25	75	.....	.....	.....	25	6
507	25,000	220	9,200	.....	60	155	83	.....	.....	35	10
508	20,000	300	60,000	20	.....	320	.....	1,500	.....	.....	15

KNITTED GOODS FACTORIES

509	200,000	291	300,000	18	.....	1,300	125	12,000	.....	65	85
510	25,000	300	33,000	2	.....	166	364	.....	.....	5	30
511	5,167,683	310	3,900,000	10	.....	13,000	7,500	87,500	400,820	500	1,900
512	138,202	294	189,673	21	.....	389	2,973	1,194	27,720	35	75
513	10,000	305	15,000	2¼	.....	41	45	285	.....	1	4
514	120,000	300	100,000	25	.....	140	440	2,800	.....	25	45
515	65,000	300	120,000	2½	.....	325	896	3,200	250	25	35
516	125,000	300	200,000	30	.....	960	700	8,000	.....	70	70
517	75,000	300	80,204	.....	yes	115	113	.....	3,663	18	17
518	210,000	277	190,500	8	.....	503	316	.....	10,600	16	45
519	100,000	305	75,000	10	.....	354	800	50,000	41,054	20	60
520	59,000	305	119,000	40	.....	533	660	.....	1,359	8	18
521	125,000	300	250,000	10	.....	613	767	.....	.....	25	90
522	49,900	305	.....	25	.....	.....	.....	.....	.....	16	37
523	50,000	305	55,000	no	no	265	1,170	.....	14,000	3	52
524	30,000	305	24,000	25	.....	347	400	.....	.....	7	6
525	20,000	300	25,000	50	.....	200	135	600	.....	4	15
526	.....	130	.....	yes	.....	25	417	.....	.....	28	.....
527	32,000	300	48,000	25	.....	112	274	348	2,784	10	10
528	84,000	300	122,000	25	.....	300	900	4,000	.....	15	60
529	30,000	300	58,308	25	.....	.....	.....	500	500	10	24

FROM MANUFACTURERS.

YARNS.—TABLE No. 16—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
33,590	10,110	18 00	9 00	8 40	5 40	6	2	5,200	.....	....	.....	.....	489
3,000	2,000	12 00	.....	6 00	.....	....	....	.....	.....	....	.....	.....	490
1,200	450	12 00	.....	6 00	.....	1	....	900	no	no	no	no	491
1,600	.....	16 00	average	.....	.....	....	....	.....	6	....	.....	.....	492
6,300	both	10 50	7 00	.....	4 20	1	....	600	5	....	5	.....	493
7,540	3,640	10 80	average	6 00	av.	....	....	.....	9	....	.....	.....	494
85,811	both	13 00	11 00	8 00	5 50	7	3	13,100	yes	....	.....	.....	495
56,000	36,000	12 75	9 45	9 00	7 05	6	3	7,500	10	....	10	10	496
76,000	both	10 14	average	for	all	....	....	.....	5	....	5	5	497
.....	.....	15 00	9 00	9 30	.....	2	1	.....	5	....	.....	.....	498
.....	.....	18 00	9 00	12 00	7 50	1	1	.....	15	....	.....	.....	499
2,500	1,500	12 00	6 00	6 60	3 60	....	....	.....	yes	....	.....	.....	500
375	.....	.....	7 50	.....	.....	....	....	.....	.....	....	.....	.....	501
3,000	5,400	.....	.....	.....	.....	1	....	1,000	.....	....	.....	.....	502
1,000	2,000	15 00	.....	10 50	.....	2	1	2,000	no	no	.....	.....	503
4,500	2,200	15 00	6 00	6 00	4 00	2	....	2,200	35	....	35	35	504
2,000	.....	10 50	9 00	.....	.....	....	....	.....	10	....	10	.....	505
5,000	both	.....	.....	.....	.....	....	....	.....	25	....	25	.....	506
8,750	1,450	10 50	9 00	7 50	.....	....	....	.....	10	....	10	.....	507
.....	.....	22 00	11 00	10 00	4 50	....	....	.....	10	....	10	10	508

AND WOMEN'S UNDERWEAR.—TABLE No. 17.

30,000	20,000	19 50	8 25	11 25	5 70	4	3	9,000	12	....	12	12	509
2,600	5,900	5 42	average	for	all	....	1	260	10	....	.....	.....	510
331,500	553500	11 00	8 25	8 00	5 50	30	10	67,000	no	no	.....	.....	511
13,293	17,621	13 00	7 00	9 50	4 50	3	2	6,747	12	....	12	.....	512
475	625	9 60	average	4 50	4 00	....	....	.....	yes	....	.....	.....	513
10,600	10,000	16 50	8 40	7 50	6 00	....	....	.....	10	....	.....	.....	514
8,500	10,700	16 50	6 10	9 00	4 20	1	1	1,800	5	....	5	5	515
25,000	20,000	15 00	9 00	9 00	6 00	3	1	6,000	.....	....	.....	.....	516
11,525	both	6 60	average	for	all	1	....	.....	yes	....	.....	.....	517
3,927	19,271	8 30	average	for	all	9	1	6,000	yes	....	.....	.....	518
19,986	both	12 00	9 00	6 75	4 50	3	....	2,439	25	....	25	.....	519
5,059	8,419	16 50	8 50	12 00	7 00	2	1	3,024	.....	....	.....	.....	520
35,143	both	6 10	average	for	all	....	....	.....	4	....	.....	.....	521
36,500	both	13 75	average	for	all	1	1	1,500	yes	....	.....	.....	522
2,000	10,000	13 00	.....	4 00	av.	3	2	1,700	5	....	5	.....	523
2,600	1,900	7 28	average	6 20	av.	1	....	1,200	20	....	20	20	524
1,000	2,000	5 00	average	2 53	av.	2	1	2,000	no	no	.....	.....	525
.....	.....	12 00	10 50	.....	.....	2	....	1,000	10	....	10	.....	526
4,500	2,200	15 75	6 30	5 25	6 30	2	....	2,200	32	....	.....	.....	527
22,000	both	6 00	average	for	all	....	....	.....	10	....	10	10	528
11,316	both	18 00	9 00	12 00	7 50	1	1	.....	15	....	5	.....	529

RETURNS IN DETAIL

Clothing Factories, Men's and Women's

Office No.	Capital employed including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
530	150,000	306	212,100	.....	15	908	800	.....	.....	18	138
531	226,000	305	.....	yes	.....	.....	.....	.....	.....	.....	.....
532	48,000	310	180,451	no	no	328	1,355	.....	.....	21	67
533	35,000	305	220,000	7	.....	128	.....	500	.....	10	90
534	.....	150	3,500	no	no	9	25	500	.....	2	.....
535	96,000	300	235,117	23	.....	255	670	4,000	19,320	18	100
536	40,000	275	131,000	50	.....	70	702	.....	.....	27	23
537	75,000	300	120,000	no	no	265	975	.....	.....	60	60
538	102,671	300	108,733	27	.....	281	126	1,300	.....	50	50
539	30,000	290	90,000	10	.....	125	175	.....	.....	10	75
540	54,834	295	123,000	7	.....	107	574	.....	.....	10	80
541	10,000	305	60,000	10	.....	135	150	.....	.....	8	40
542	100,000	295	225,000	no	no	189	1,621	.....	24,400	40	50
543	41,000	290	67,000	.....	5	214	845	.....	.....	12	19
544	160,000	300	360,000	3	.....	1,515	2,270	.....	4,620	.....	.....
545	100,000	300	.....	no	no	.....	.....	.....	.....	60	45
546	75,000	305	200,000	10	.....	.....	.....	.....	.....	15	150
547	.....	310	230,000	10	.....	700	1,100	500	.....	25	100
548	150,000	28	150,802	.....	.....	.....	.....	.....	.....	.....	.....

Boot and Shoe Manufacturers,

549	75,000	300	250,000	25	.....	250	.....	15,000	.....	75	25
550	40,000	300	250,000	50	.....	204	585	4,000	.....	75	15
551	579,738	263	1,375,509	17	.....	1,392	334	25,547	102,186	290	170
552	52,890	290	89,086	25	.....	55	398	2,036	6,840	17	33
553	123,588	300	359,397	15	.....	793	1,655	.....	13,700	104	63
554	240,000	300	111,092	33⅓	.....	172	1,310	600	.....	18	12
555	500,000	278	1,009,000	31	.....	812	1,375	6,000	6,000	214	149
556	79,818	270	153,274	20	.....	238	937	13,390	2,343	50	20
557	53,000	300	96,000	21	.....	90	825	1,660	.....	33	11
558	25,000	300	50,000	20	.....	1,500	300	.....	1,000	10	4
559	50,000	300	400,000	20	.....	75	1,500	5,000	.....	85	15
560	51,500	300	90,000	10	.....	7,500	325	.....	.....	24	21
561	34,000	285	60,000	20	.....	100	800	.....	.....	20	10
562	25,000	300	165,000	20	.....	162	250	.....	.....	40	20
563	25,000	300	85,000	no	no	297	800	.....	.....	25	1
564	50,000	300	100,000	10	.....	.....	900	1,800	.....	35	12
565	2,500	305	5,000	no	no	25	23	.....	.....	2	.....
566	34,000	285	60,000	10	.....	100	800	.....	.....	20	10
567	1,000	305	700	20	.....	40	.....	.....	.....	.....	.....
568	44,000	300	105,500	no	no	175	339	.....	.....	42	30
569	100,000	300	168,000	25	.....	220	691	600	9,463	60	30
570	50,000	305	300,000	yes	.....	1,000	650	.....	.....	94	65
571	35,000	300	.....	15	.....	120	100	700	.....	15	.....
572	100,000	300	370,000	20	.....	468	1,100	.....	.....	105	40
573	40,000	250	36,000	no	no	143	270	.....	.....	11	.....

FROM MANUFACTURERS.

WHITEWEAR, MILLINERY, ETC.—TABLE No. 18.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
54,868	both	7 00	average	for	all	10	9	18,156	.....	....	.....	.....	530
.....	.....	.....	.....	.....	.....	.....	.....	.....	yes	....	.....	.....	531
36,000	both	7 80	average	for	all	....	6	3,581	no	no	.....	.....	532
36,000	both	7 08	average	for	all	2	1	.....	4	....	4	4	533
310	.....	15 00	9 00	.....	.....	.....	.....	.....	no	no	.....	.....	534
12,428	25,585	13 80	.....	5 12	.....	13	1	12,081	6	....	6	14	535
13,647	7,425	13 50	9 60	9 00	7 50	5	....	11,350	7½	....	7½	.....	536
45,000	both	7 50	average	for	all	4	....	.....	10	....	.....	.....	537
27,862	12,246	18 00	9 75	9 60	5 25	3	1	9,900	2	....	.....	.....	538
6,500	3,100	18 00	6 00	12 00	4 50	3	....	4,500	6	....	6	6	539
25,000	both	5 40	average	for	all	5	1	5,180	yes	....	.....	.....	540
.....	.....	.....	.....	.....	.....	4	4	.....	yes	....	.....	.....	541
12,700	11,500	12 00	6 00	9 00	5 00	4	3	7,000	no	no	no	no	542
6,500	4,700	11 53	average	5 28	av.	2	1	1,960	10	....	10	10	543
79,390	.....	.....	.....	.....	.....	5	3	9,000	3	....	.....	3	544
.....	.....	.....	.....	.....	.....	10	5	.....	5	....	.....	.....	545
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	546
10,000	40,000	.....	.....	.....	.....	11	5	8,000	10	....	.....	.....	547
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	548

FELT FOOTWEAR.—TABLE No. 19.

30,000	5,000	13 50	9 00	9 00	6 00	1	1	3,500	6	....	.....	.....	549
40,000	both	11 00	average	7 00	av.	2	1	3,300	20	....	20	.....	550
142,292	55,639	16 50	9 00	8 55	6 00	11	5	10,120	3	....	3	5	551
11,050	14,491	16 50	8 00	9 50	5 50	5	8	9,840	4	....	4	4	552
66,554	27,621	12 80	average	8 77	av.	12	2	16,444	20	....	.....	.....	553
16,714	both	11 14	average	for	all	1	1	1,925	10	....	10	10	554
122,000	54,746	15 60	12 00	10 20	7 50	12	14	22,000	5	....	5	.....	555
23,865	4,773	16 50	10 50	9 00	6 00	3	....	6,750	20	....	20	20	556
15,900	3,300	14 00	7 00	8 25	4 50	2	6	4,500	yes	....	.....	.....	557
8,000	2,000	24 00	.....	9 50	.....	3	....	1,750	10	....	10	10	558
30,000	5,000	20 00	10 00	12 00	7 50	2	1	3,500	8	....	.....	.....	559
12,329	6,165	15 90	.....	9 00	.....	3	2	6,200	5	....	5	5	560
11,400	2,800	12 00	10 50	6 00	4 80	1	....	.....	5	....	.....	.....	561
20,000	7,200	19 00	8 00	13 50	4 50	3	1	5,200	no	no	.....	.....	562
11,000	300	18 00	9 00	.....	6 00	4	....	3,000	.....	....	.....	.....	563
9,500	3,200	11 25	7 20	6 75	3 75	....	....	.....	no	no	.....	.....	564
1,200	.....	10 00	.....	.....	.....	.....	.....	.....	no	no	.....	.....	565
12,000	2,300	12 00	10 50	6 00	.....	1	....	1,000	7½	....	7½	7½	566
.....	.....	.....	.....	.....	.....	1	....	.....	.....	....	.....	.....	567
19,760	9,120	9 42	average	6 08	av.	4	3	6,184	yes	....	.....	.....	568
30,041	15,032	10 00	average	10 00	av.	8	6	11,015	no	no	.....	.....	569
35,000	20,000	19 50	7 50	12 00	6 00	4	....	.....	5	....	5	.....	570
10,000	.....	15 00	.....	.....	.....	.....	.....	.....	10	....	10	10	571
85,788	.....	.....	.....	.....	.....	2	2	.....	yes	....	.....	.....	572
4,800	.....	.....	11 00	.....	.....	.....	.....	.....	.....	....	.....	.....	573

RETURNS IN DETAIL

FUR MANUFACTURERS, DRESSERS AND DYERS;

Office No.	Capital employed, including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
574	32,700	300	118,780	33	.....	197	676	1,200	8,000	19	41
575	165,000	300	355,000	17	.....	392	2,488	145,200	6,000	85	20
576	35,000	305	70,000	yes	.....	42	300	.....	.....	9	12
577	10,000	300	8,000	.....	.....	12	12	250	.....	1	1
578	50,000	300	175,000	10	.....	495	325	2,500	.....	65	45
579	40,000	250	80,000	15	.....	250	300	.....	.....	10	40

TANNERIES, HARNESS AND LEATHER

580	175,000	308	192,416	.....	.....	105	.....	.....	.....	30	.....
581	3,000	300	10,000	10	.....	66	18	.....	.....	6	3
582	27,000	280	72,558	10	.....	129	137	.....	2,195	17	32
583	7,000	200	2,500	no	no	25	20	.....	.....	3	.....
584	10,000	290	20,000	25	.....	308	58	.....	.....	5	3
585	55,000	310	60,000	10	.....	393	364	600	.....	24	.....
586	40,000	300	54,000	.....	.....	164	284	.....	1,600	19	2
587	190,000	300	325,000	35	.....	775	505	6,500	.....	130	20
588	50,000	300	100,000	no	no	500	500	500	2,000	20	2
589	15,000	300	25,000	.....	20	120	300	.....	.....	4	.....
590	81,513	300	117,700	.....	7	154	686	2,337	200	25	.....
591	42,000	300	80,000	11	.....	100	722	1,500	.....	13	.....
592	350,000	300	570,000	13	.....	2,500	600	25,000	.....	280	80
593	100,000	295	225,000	no	no	189	1,621	.....	24,400	40	50
594	8,000	300	8,000	no	no	78	200	.....	.....	2	.....
595	7,000	300	20,000	no	no	25	1,500	300	.....	3	.....
596	68,750	305	84,500	36	.....	122	403	500	4,226	13	2
597	1,200,000	310	1,300,000	yes	.....	2,870	6,263	24,803	34,800	250	.....
598	50,000	300	92,619	10	.....	300	250	2,500	19,000	10	15
599	200,000	300	616,540	35	.....	1,388	2,000	6,000	.....	88	.....
600	29,000	275	45,000	25	.....	85	200	.....	.....	7	13
601	200,000	305	1,250,000	15	.....	1,232	6,000	50,000	.....	200	150
602	111,585	310	125,698	15	.....	507	762	100	1,837	23	8
603	6,000	290	10,000	no	no	70	58	3,233	.....	4	1
604	40,000	305	100,000	no	no	.....	2,800	.....	.....	25	33

FLOUR AND FEED MILLS; CEREAL

605	250,000	305	600,000	no	no	1,500	3,300	2,000	6,000	25	.....
606	29,741	300	92,508	no	no	150	275	5,667	293	8	1
607	22,500	310	52,000	4	.....	240	550	300	.....	6	1
608	2,025,000	312	5,242,135	yes	.....	.....	8,604	16,254	103,556	275	150
609	10,000	300	5,000	25	.....	122	125	.....	.....	2	.....
610	15,000	295	36,000	15	.....	137	409	.....	.....	2	.....
611	10,000	300	25,000	.....	.....	276	300	.....	.....	3	.....
612	20,000	300	37,500	no	no	72	44	.....	.....	2	.....
613	35,000	300	50,366	.....	.....	105	405	.....	1,100	4	.....
614	4,000	312	.....	.....	.....	54	52	.....	.....	1	.....
615	40,000	300	4,000	25	.....	43	51	.....	83	1	.....
616	5,000	100	4,000	.....	20	13	42	150	50	1	.....
617	9,000	312	40,000	no	no	42	104	.....	.....	1	.....

FROM MANUFACTURERS.

Hat and Cap Factories.—Table No 20.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c	$ c.	$ c.			$	%	%	%	%	
12,265	13,717	19 25	9 75	12 00	5 25	2	3	6,768	2	....	2	.....	574
55,500	both	10 60	average	for	all	5	2	9,100	12	....	12	12	575
3,000	2,000	12 00	average	7 00	av.	3	1	1,500	.....	....	.....	.....	576
400	300	8 00	.....	6 00	.....	....	....	.....	.....	....	.....	.....	577
44,860	.....	18 00	12 00	15 00	7 20	3	7	.....	no	no	.....	.....	578
.....	.....	15 00	10 00	12 00	6 00	....	....	.....	10	....	.....	.....	579

Goods Factories.—Table No. 21.

14,276	.....	12 00	10 50	.....	.....	1	....	624	5	....	5	.....	580
2,800	700	.....	9 00	.....	5 00	....	....	.....	5	....	5	.....	581
8,813	7,554	14 00	7 50	7 00	3 75	3	1	4,226	10	....	10	10	582
800	.....	5 00	4 00	.....	.....	....	....	.....	no	no	.....	.....	583
3,000	1,200	15 00	10 50	9 00	.....	1	....	700	20	....	20	.....	584
12,950	.....	13 00	average	.....	.....	4	2	2,900	10	....	10	10	585
10,413	325	13 50	8 55	6 00	3 00	1	2	2,500	10	....	10	10	586
47,000	6,000	14 00	6 00	7 00	4 25	6	3	8,000	7½	....	7½	7½	587
10,000	800	14 00	10 50	5 00	3 00	1	1	3,000	10	....	10	10	588
2,300	.....	12 00	10 00	.....	.....	....	....	.....	10	....	10	.....	589
12,081	.....	15 00	10 05	.....	.....	1	....	2,000	yes	....	.....	.....	590
6,036	.....	10 00	8 50	.....	.....	....	....	.....	5	....	5	.....	591
75,000	30,000	19 20	8 40	9 00	5 40	3	3	6,000	10	....	10	10	592
12,700	11,500	12 00	6 00	9 00	5 00	4	3	7,000	no	no	.....	.....	593
.....	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	594
1,500	.....	10 00	.....	.....	.....	....	....	.....	10	....	.....	.....	595
8,800	520	15 00	12 00	.....	6 75	....	1	450	20	....	.....	.....	596
133,344	.....	10 46	average	.....	.....	14	3	22,520	.....	....	.....	.....	597
6,500	2,500	15 00	12 00	9 00	6 00	3	2	7,500	no	no	.....	.....	598
50,450	.....	11 44	average	.....	.....	2	....	1,600	10	....	10	.....	599
5,980	both	6 50	average	for	all	....	....	.....	.....	....	.....	.....	600
135,000	both	7 56	average	for	atl	15	6	20,000	yes	....	.....	.....	601
11,987	526	.....	.....	.....	.....	3	1	2,513	.....	....	15	12	602
1,722	270	18 00	7 00	6 00	.....	....	....	.....	12	....	12	.....	603
10,000	6,000	23 00	11 00	8 00	5 00	5	2	7,000	15	....	15	.....	604

Food Factories.—Table No. 22.

16,000	.....	13 00	.....	.....	.....	4	3	5,600	no	no	.....	.....	605
3,532	72	8 83	average	.....	1 44	1	1	1,420	.....	....	.....	.....	606
4,500	500	10 50	.....	10 00	.....	1	1	2,010	15	....	.....	.....	607
142,000	30,500	14 55	9 75	7 80	4 95	23	4	34,721	12½	....	12½	.....	608
1,300	.....	15 00	9 00	.....	.....	....	....	.....	yes	....	.....	.....	609
1,200	.....	11 00	.....	.....	.....	....	....	.....	10	....	.....	.....	610
1,800	.....	12 00	.....	.....	.....	....	....	.....	.....	....	.....	.....	611
800	.....	12 00	6 00	.....	.....	1	....	.....	20	....	20	.....	612
2,412	.....	12 10	.....	.....	.....	....	....	.....	no	no	.....	.....	613
500	.....	10 00	.....	.....	.....	....	....	.....	.....	....	.....	.....	614
400	.....	8 00	.....	.....	.....	....	....	.....	no	no	.....	.....	615
165	.....	9 00	.....	.....	.....	....	....	.....	no	no	.....	.....	616
400	.....	9 00	.....	.....	.....	....	....	.....	no	no	.....	.....	617

RETURNS IN DETAIL

FLOUR AND FEED MILLS: CEREAL

Office No.	Capital employed including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
618	62,000	300	176,673	4	.....	515	750	208	380	15	.....
619	4,000	300	345,000	no	no	110	1,972	.....	1,880	15	1
620	60,000	300	281,000	no	no	616	1,462	1,500	.....	22	3
621	50,000	300	120,237	10	.....	955	1,066	.....	3,528	10	.....
622	10,000	305	40,000	yes	.....	97	200	200	300	2	.....
623	75,000	305	105,000	4	.....	805	640	.....	.....	8	.....
624	15,000	300	10,000	no	no	55	80	.....	.....	8	.....
625	42,208	300	52,923	14	.....	70	178	.....	44,781	5	3
626	.....	313	523,879	.....	.....	.....	.....	.....	.....	19	.....
627	12,000	290	23,600	10	.....	54	115	.....	.....	2	.....
628	15,000	300	40,000	.....	.....	50	200	.....	.....	3	.....
629	20,000	305	16,700	.....	25	75	200	600	.....	2	.....
630	5,000	300	.....	.....	.....	55	32	.....	.....	2	.....
631	29,000	295	99,558	12	.....	283	380	533	5,329	7	.....
632	40,000	307	94,854	no	no	141	771	6,000	6,425	5	1
633	12,000	300	.....	no	no	81	120	.....	.....	3	.....
634	32,000	305	40,000	.....	.....	153	180	.....	2,000	6	.....
635	20,000	310	40,000	no	no	87	.....	200	208	3	.....
636	20,000	300	40,000	yes	.....	120	180	125	.....	3	.....
637	40,000	300	141,000	yes	.....	320	454	200	.....	8	.....
638	18,000	305	30,000	no	no	95	90	500	.....	7	.....
639	16,000	300	38,200	15	.....	50	310	300	255	3	1
640	2,200	305	3,500	.....	.....	110	150	.....	.....	3	.....
641	90,000	300	500,000	10	.....	250	1,000	4,500	.....	16	3
642	14,000	305	20,000	no	no	137	132	450	.....	2	.....
643	15,000	300	42,722	yes	.....	107	224	312	2,919	6	.....
644	17,000	290	35,000	yes	.....	40	270	250	.....	4	.....
645	40,000	307	97,958	no	no	215	917	.....	6,880	4	1
646	20,000	300	45,000	no	no	132	300	.....	300	2	.....
647	25,000	313	200,000	.....	2	135	425	.....	2,840	9	1
648	90,000	300	115,726	.....	40	232	874	.....	700	15	.....
649	60,000	300	75,000	no	no	216	1,300	7,000	3,500	7	1
650	86,000	305	266,000	34	.....	346	241	.....	.....	13	.....
651	100,000	313	300,000	yes	.....	1,180	1,800	.....	396,475	37	18
652	65,000	300	150,000	10	.....	400	590	500	.....	10	1
653	8,000	250	4,000	5	.....	42	185	200	.....	2	.....
654	25,000	300	150,000	no	no	200	500	.....	.....	12	.....
655	35,000	300	151,256	.....	5$\frac{3}{4}$	295	685	.....	5,492	7	.....
656	20,000	305	.....	.....	.....	190	212	.....	.....	3	.....
657	25,000	150	75,000	.....	50	170	280	.....	3,000	3	.....
658	250,000	300	700,000	no	no	400	2,400	.....	.....	45	4
659	20,000	305	.....	.....	.....	275	155	.....	.....	3	.....
660	12,000	300	30,000	no	no	81	120	500	.....	3	.....
661	25,000	310	100,000	no	no	150	300	.....	.....	2	.....
662	400,000	275	.....	yes	.....	500	.....	10,000	.....	48	2
663	20,000	200	40.000	.....	yes	375	384	.....	.....	6	.....
664	100,000	312	.....	.....	.....	350	1,300	.....	.....	16	1
665	1,300,000	300	1,500,000	5	.....	1,800	3,600	100,000	.....	45	.....
666	41,000	300	.....	.....	yes	225	250	8,000	900	16	1
667	.....	300	.....	.....	.....	551	443	500	.....	.....	.....
668	25,000	305	65,000	10	.....	207	280	.....	.....	6	.....
669	20,000	305	60,000	no	no	321	241	1,500	.....	6	.....
670	20,000	300	65,000	yes	.....	130	240	1,800	.....	6	.....
671	13,000	305	30,000	no	no	45	70	.....	.....	1	.....

FROM MANUFACTURERS.

FOOD FACTORIES.—TABLE NO. 22.—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
5,710	.....	13 50	10 50	.....	.....	3	....	3,000	no	no	.....	.....	618
6,000	750	18 00	10 00	15 00	.....	....	....	.....	.....	....	.....	.....	619
14,529	1,200	13 20	average	8 00	.....	....	....	.....	no	no	.....	.....	620
5,548	.....	16 00	10 50	.....	.....	2	....	2.700	12½	....	12½	.....	621
1,100	.....	10 50	.....	.....	.....	....	....	.....	no	no	.....	.....	622
5,000	.....	21 60	11 00	.....	.....	2	....	1,500	yes	....	.....	.....	623
3,500	.....	21 00	10 50	.....	.....	....	....	.....	.....	....	.....	.....	624
2,250	825	.....	12 00	.....	7 00	1	3	3,350	10	....	10	10	625
13,438	.....	12 00	11 10	11 10	.....	2	3	1,716	no	no	.....	.....	626
895	.....	13 50	7 50	.....	.....	....	....	.....	.....	....	.....	.....	627
1,600	.....	10 67	average	.....	.....	....	....	.....	.....	....	.....	.....	628
1,208	.....	11 76	.....	.....	.....	....	....	.....	no	no	.....	.....	629
750	.....	7 50	.....	.....	.....	....	....	.....	yes	....	.....	.....	630
3,796	.....	17 00	11 00	.....	.....	2	1	2,412	11	....	11	.....	631
2,481	388	13 50	9 60	7 50	.....	1	....	480	10	....	10	10	632
2,000	.....	13 34	.....	.....	.....	....	....	.....	10	....	10	10	633
3,100	.....	12 00	9 00	.....	.....	....	....	.....	yes	....	.....	.....	634
1,200	.....	10 00	6 55	.....	.....	....	....	.....	5	....	.....	.....	635
2,000	.....	13 34	average	.....	.....	....	....	.....	no	no	.....	.....	636
4,680	.....	18 00	11 00	.....	.....	2	1	2,500	yes	....	yes	.....	637
2,400	.....	12 00	9 00	.....	.....	....	....	.....	no	no	.....	.....	638
1,330	both	12 60	10 00	4 00	.....	....	....	.....	9	....	9	.....	639
1,400	.....	12 00	9 00	.....	.....	....	....	.....	8	....	8	.....	640
13,337	1,560	24 00	8 11	17 00	6 00	1	3	1,632	10	....	.....	.....	641
1,000	.....	10 00	.....	.....	.....	....	....	.....	5	....	.....	.....	642
2,262	.....	11 00	7 50	.....	.....	....	....	.....	1	....	1	.....	643
1,980	.....	13 00	.....	.....	.....	....	....	.....	yes	....	.....	.....	644
1,859	300	13 50	9 00	.....	6 00	2	....	1,320	10	....	10	.....	645
1,050	.....	12 00	9 00	.....	.....	3	....	1,560	.....	....	.....	.....	646
5,652	313	15 00	12 00	6 00	.....	1	....	1,500	8	....	8	8	647
7,436	.....	15 00	11 00	.....	.....	2	1	2,800	11	....	11	.....	648
3,900	400	13 00	9 00	8 00	.....	....	1	400	no	no	.....	.....	649
8,268	.....	12 25	.....	.....	.....	3	1	4,004	10	....	.....	.....	650
34,756	both	19 50	13 80	10 00	8 40	4	1	5,708	yes	....	.....	.....	651
5,800	420	13 75	8 25	7 00	.....	2	....	1,500	no	no	.....	.....	652
800	.....	.....	9 00	.....	.....	....	....	.....	no	no	.....	.....	653
7,000	.....	11 67	average	.....	.....	....	....	.....	.....	....	.....	.....	654
3,752	.....	14 00	10 50	.....	.....	2	1	3,016	10	....	10	10	655
1,360	.....	12 00	9 00	.....	.....	....	....	.....	.....	....	.....	.....	656
2,000	.....	12 00	8 00	.....	.....	2	....	1,200	no	no	.....	.....	657
28,530	1,400	18 00	12 00	9 00	.....	3	4	6,500	no	no	.....	.....	658
1,400	.....	12 00	9 00	.....	.....	....	....	.....	.....	....	.....	.....	659
1,200	.....	12 00	9 00	.....	.....	....	....	.....	no	no	.....	.....	660
1,500	.....	16 00	12 00	.....	.....	2	....	.....	.....	....	.....	.....	661
.....	.....	.....	.....	.....	.....	10	2	.....	yes	....	.....	.....	662
3,480	.....	15 00	9 00	.....	.....	....	....	.....	no	no	.....	.....	663
8,000	.....	10 00	average	.....	.....	2	1	2,000	yes	....	.....	.....	664
31,200	.....	15 00	12 00	.....	.....	7	9	8,000	5	....	5	5	665
6,500	364	12 00	.....	6 00	.....	....	....	.....	20	....	20	.....	666
.....	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	667
3,500	.....	13 00	10 00	.....	.....	1	....	312	5	....	5	5	668
3,038	.....	10 10	average	.....	.....	....	1	400	no	no	.....	.....	669
3,500	.....	11 40	average	.....	.....	....	....	.....	10	....	10	10	670
660	.....	13 00	.....	.....	.....	1	....	250	no	no	.....	.....	671

RETURNS IN DETAIL

FLOUR AND FEED MILLS; CEREAL

Office No.	Capital employed including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$		$	
672	60,000	305	250,000	20	.....	225	500	4,000	.....	12	.....
673	4,000	312	.....	yes	.....	66	.....	.....	.....	1	.....
674	70,000	310	.....	no	no	600	600	2,000	.....	9	.....
675	30,000	300	125,000	30	.....	125	365	486	.....	6	.....
676	15,000	275	18,000	.....	20	67	130	.....	.....	2	.....
677	30,000	300	600,000	yes	.....	199	385	300	500	6	.....
678	6,000	300	20,861	7	.....	46	60	600	200	1	.....
679	30,000	305	35,000	.....	.....	200	360	.....	.....	3	.....
680	10,000	300	30,000	.....	.....	85	7,000	550	1,800	3	.....
681	17,000	300	30,000	no	no	131	192	2,000	.....	2	1
682	4,000	300	.....	.....	.....	27	25	.....	.....	.....	.....
683	200,000	305	350,000	30	.....	1,650	3,200	.....	.....	17	3
684	60,000	250	120,000	no	no	95	700	2,500	.....	11	1
685	150,000	305	400,000	no	no	715	1,800	3,000	.....	20	.....
686	20,000	310	103,000	no	no	76	319	80	1,796	4	.....
687	8,000	300	5,778	yes	.....	160	70	75	.....	.....	.....
688	20,000	300	48,000	25	.....	217	288	.....	.....	4	.....
689	25,000	300	40,000	25	.....	211	326	1,250	348	16	3
690	40,000	305	100,000	.....	.....	90	140	6,100	.....	8	.....
691	11,000	275	23,000	no	no	52	200	200	1,000	2	.....
692	9,000	300	7,000	14	.....	54	110	300	.....	2	.....
693	50,000	310	150,000	.....	yes	603	1,200	200	.....	8	.....
694	20,000	310	26,000	no	no	210	600	.....	.....	5	.....
695	25,000	290	85,000	no	no	250	550	.....	400	7	1
696	40,000	300	75,000	no	no	142	540	.....	.....	10	.....
697	8,000	305	.....	no	no	35	60	250	.....	.....	.....
698	22,000	300	35,000	no	no	218	250	.....	.....	3	.....
699	50,000	300	100,000	yes	.....	600	750	500	.....	6	2
700	3,000	200	.....	.....	.....	34	60	.....	.....	.....	.....
701	26,000	300	70,000	10	.....	172	228	800	150	7	1
702	275,000	365	.....	.....	.....	1,600	6,000	10,000	500	38	2
703	20,000	300	20,000	.....	yes	100	.....	.....	.....	4	.....
704	.....	....	.....	.....	.....	23	15	.....	.....	.....	.....

BAKERS, BREAD AND BISCUIT, AND

705	40,000	305	194,879	20	.....	453	377	310	.....	62	4
706	2,000	300	30,000	10	.....	12	20	100	.....	2	5
707	60,000	300	100,000	13	.....	129	375	350	11,200	30	44
708	77,000	290	180,000	30	.....	450	460	2,000	.....	25	35
709	100,000	305	390,273	20	.....	195	1,587	.....	.....	25	12
710	50,000	300	100,000	10	.....	160	900	2,000	.....	9	1
711	50,000	300	100,000	$\frac{1}{5}$	.....	457	787	1,500	4,002	19	22
712	244,168	294	410,000	15	.....	720	1,661	23,500	.....	35	22

CANNING, PORK PACKING, BACON CURING,

713	189,198	180	143,266	40	.....	135	865	5,071	130,442	37	130
714	127,932	132	60,104	8	.....	108	468	2,075	39,296	54	73
715	184,733	310	119,364	.....	14	160	826	6,123	92,528	60	92
716	.....	334	4,500,000	15	.....	355	9,300	23,000	50,000	250	5
717	125,241	90	71,412	23	.....	62	598	4,186	45,133	25	40
718	.....	150	271,529	30	.....	293	.....	.....	.....	214	135
719	.....	150	172,130	no	no	528	.....	2,500	.....	40	60
720	197,821	149	127,231	50	.....	255	844	14,327	97,146	63	125

FROM MANUFACTURERS.

FOOD FACTORIES.—TABLE No. 22—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
6,000	.....	18 00	11 00	.....	.....	2	....	1,600	20	....	.....	.....	672
500	.....	9 60	.....	.....	.....	....	....	.....	.....	.....	.....	.....	673
6,000	.....	18 00	12 00	.....	.....	1	2	4,200	no	no	.....	.....	674
3,060	.....	18 00	11 00	.....	.....	1	....	1,340	5	....	5	.....	675
1,200	.....	13 00	11 00	.....	.....	2	....	1,500	7½	....	.....	.....	676
3,380	.....	15 00	10 50	.....	.....	....	....	.....	.....	.....	.....	.....	677
660	.....	13 50	.....	.....	.....	....	....	.....	35	....	35	.....	678
2,000	.....	13 07	average	.....	.....	....	....	.....	10	....	.....	.....	679
1,200	.....	8 00	average	.....	.....	....	....	.....	.....	....	.....	.....	680
1,000	265	10 00	average	.....	5 30	....	....	.....	10	....	.....	.....	681
.....	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	682
9,400	1,700	10 80	average	11 30	.....	....	....	.....	25	....	.....	.....	683
5,500	500	23 00	9 50	12 00	.....	1	1	1,500	no	no	.....	.....	684
10,200	.....	15 30	10 20	.....	.....	4	....	3,000	7	....	7	7	685
1,675	.....	.....	.....	.....	.....	2	1	1,760	no	no	.....	.....	686
.....	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	687
2,200	.....	15 00	11 00	.....	.....	....	....	.....	no	no	.....	.....	688
5,000	1,000	15 00	9 00	6 00	3 00	3	3	3,000	no	no	.....	.....	689
4,900	.....	15 00	10 50	.....	.....	....	....	.....	.....	....	.....	.....	690
840	.....	9 00	6 00	.....	.....	....	....	.....	no	no	.....	.....	691
650	.....	.....	9 00	.....	.....	....	....	.....	10	....	.....	.....	692
4,300	.....	9 00	.....	.....	.....	2	....	1,450	5	....	.....	.....	693
3,500	.....	16 25	9 00	.....	.....	....	....	.....	no	no	.....	.....	694
4,150	500	15 00	10 00	.....	.....	....	1	500	10	....	10	10	695
5,870	.....	15 00	11 00	.....	.....	1	....	800	yes	....	yes	.....	696
.....	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	697
1,700	.....	10 50	9 00	.....	.....	....	....	.....	8	....	10	.....	698
5,000	800	12 00	7 00	.....	.....	2	2	2,400	no	no	.....	.....	699
.....	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	700
4,400	460	13 00	10 00	9 00	6 00	7	1	4,860	5	....	5	5	701
.....	.....	9 00	.....	.....	.....	5	2	.....	10	....	10	10	702
2,500	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	703
.....	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	704

CONFECTIONERS.—TABLE No. 23.

34,552	1,820	11 04	average	9 10	av.	6	4	4,870	yes	....	.....	.....	705
1,560	1,500	20 00	10 00	9 50	5 25	1	....	2,000	5	....	5	.....	706
16,979	10,154	15 00	10 00	8 00	5 00	4	1	6,596	13	....	13	13	707
13,000	9,000	14 00	10 00	7 00	4 00	6	3	11,000	5	....	5	5	708
20,000	both	16 08	average	for	all	4	2	6,000	no	no	.....	.....	709
5,400	300	17 25	9 00	.....	6 00	2	....	1,800	20	....	20	.....	710
9,763	4,335	15 00	6 50	10 00	4 00	7	1	6,277	10	....	10	.....	711
27,524	6,882	22 25	.....	11 00	.....	....	....	.....	.....	....	.....	.....	712

ABATTOIRS, ETC.—TABLE No. 24.

8,796	8,600	11 25	9 60	6 00	4 80	2	1	2,495	10	....	10	10	713
6,417	1,953	15 00	10 50	7 50	6 00	2	....	2,650	15	....	15	15	714
9,000	7,000	13 50	9 00	7 50	6 00	2	....	1,500	10	....	10	.....	715
144,150	1,600	16 50	11 00	.....	6 00	38	12	50,000	2	....	2	2	716
3,200	2,400	15 00	12 00	.....	6 00	2	1	1,950	12	....	12	12	717
35,225	both	13 50	9 60	6 00	4 80	1	1	2,200	7½	....	7½	7½	718
22,000	both	12 00	9 90	7 50	4 80	2	1	2,500	5	....	5	5	719
15,564	8,972	15 00	10 50	7 50	6 00	2	....	2,000	13	....	.....	.....	720

RETURNS IN DETAIL

CANNING, PORK PACKING, BACON CURING,

Office No.	Capital employed, including plant.	No. of days in operation during 1913.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
721	124,800	160	78,117	20	.....	250	575	3,957	46,846	50	125
722	100,000	170	80,000	10	.....	141	975	2,500	900	20	30
723	100,000	180	150,000	10	.....	125	.....	4,000	.....	20	75
724	150,000	312	132,000	.....	12	1,900	2,300	.....	.....	80	.....
725	200,000	300	1,085,000	no	no	514	3,000	.....	8,000	65	.....
726	125,000	340	90,000	10	.....	450	1,250	8,000	.....	30	75
727	45,000	110	50,000	25	.....	111	.....	4,000	10,000	40	75
728	22,000	125	35,000	yes	.....	20	140	.....	.....	25	25
729	25,000	48	47,500	30	.....	.....	400	1,000	500	25	25
730	22,000	90	15,000	50	.....	45	210	500	.....	15	24
731	338,570	300	1,270,268	32	.....	853	7,562	102,704	1,009,195	200	150
732	500,000	305	2,933,456	9½	.....	1,348	8,000	.....	.....	125	2
733	.....	150	36,505	no	no	337	.....	.....	.....	50	75
734	40,000	100	60,000	5	.....	105	500	2,000	.....	30	11
735	210,506	111	85,000	.....	20	831	986	5,619	64,031	50	80
736	100,000	306	1,033,000	18	.....	1,132	472	2,000	7,240	45	.....
737	150,000	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
738	50,000	312	100,000	.....	.....	236	292	1,500	.....	12	.....
739	125,349	100	71,412	25	.....	62	1,125	4,186	43,811	25	40
740	500,000	305	1,425,777	.....	yes	2,046	6,648	750	.....	137	.....
741	225,000	300	1,085,000	.....	1	530	3,000	1,000	5,000	64	4
742	100,000	163	80,000	12½	.....	122	.....	4,000	.....	45	53
743	15,000	60	10,000	no	no	64	35	250	.....	20	40
744	.....	160	35,000	20	.....	85	.....	10,000	.....	117	20
745	300,000	310	1,400,000	yes	.....	1,800	4,200	15,000	10,000	125	.....
746	20,000	305	10,000	.....	.....	210	1,300	300	.....	12	30
747	200,000	300	150,700	.....	.....	862	2,850	16,000	14,000	19	.....
748	13,200	300	100,000	90	.....	50	45	1,000	3,600	2	1
749	214,805	170	137,316	50	.....	59	1,567	15,992	122,046	50	110
750	11,000	103	15,150	5	.....	41	250	350	.....	15	24
751	100,000	120	62,000	50	.....	340	.....	.....	.....	40	40
752	150,000	72	95,000	10	.....	38	225	60,000	3,000	45	60

DAIRY PRODUCTS AND OTHER

753	40,000	305	135,000	5	.....	625	900	300	2,600	12	10
754	3,000	200	14,769	.....	8	10	18	400	.....	3	.....
755	7,000	300	12,000	no	no	54	110	5,000	.....	6	1
756	6,000	313	56,983	.....	5	43	108	100	.....	5	1
757	300,000	300	950,000	20	.....	2,459	875	16,000	6,500	80	125
758	75,000	300	200,000	no	no	250	300	1,200	.....	20	12
759	40,000	160	6,832	yes	.....	85	87	500	.....	9	.....
760	40,000	305	24,495	no	no	225	425	.....	3,401	32	.....
761	6,000	305	20,000	10	.....	115	120	.....	.....	1	.....
762	20,000	305	75,000	.....	38	16	7,000	.....	.....	25	.....
763	130,000	295	118,000	no	no	450	325	3,500	38,000	11	16
764	666,700	315	368,671	.....	.....	4,713	5,402	.....	.....	142	15
765	10,600	305	3,000	.....	yes	60	53	.....	1,500	4	.....
766	30,000	305	19,500	no	no	180	110	.....	.....	12	.....
767	100,000	310	250,000	12	.....	1,000	500	6,000	.....	25	20
768	90,000	125	80,000	25	.....	90	500	45,000	.....	7	50

FROM MANUFACTURERS.

ABATTOIRS, ETC.—TABLE No. 24.—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
7,438	both	13 50	8 25	6 00	4 80	1	1	2,100	1/6	....	1/6	.....	721
10,800	both	15 00	10 50	12 00	9 00	2	1	2,600	15	....	15	15	722
5,000	10,000	8 33	average	4 44	av.	2	1	3,500	10	....	10	10	723
35,400	.....	13 00	10 50	.....	.....	7	....	17,500	7½	....	7½	5	724
39,897	.....	15 00	10 00	.....	.....	2	4	4,950	6	....	6	6	725
11,000	5,000	15 00	12 00	6 00	4 50	2	1	4,500	5	....	5	.....	726
4,500	1,800	12 00	9 00	10 00	9 00	1	1	1,700	25	....	25	.....	727
4,000	both	4 00	average	for	all	1	....	1,100	10	....	10	10	728
2,500	1,500	15 00	10 50	7 50	4 50	2	....	1,800	no	no	.....	.....	729
2,500	2,000	11 11	average	5 50	av.	....	....	.....	15	....	15	15	730
67,916	45,277	12 75	9 75	7 95	6 00	10	3	17,608	yes	....	.....	.....	731
63,153	1,100	13 15	10 25	11 00	.....	12	2	32,002	7½	....	7½	.....	732
11,310	6,504	12 00	9 00	6 00	4 80	3	1	3,450	no	no	.....	.....	733
3,000	300	13 50	10 50	.....	.....	6	1	2,585	no	no	.....	.....	734
11,347	4,300	15 00	10 50	6 00	.....	1	2	2,500	20	....	20	.....	735
22,305	.....	15 00	12 00	.....	.....	10	1	10,306	12½	....	12½	.....	736
.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	737
8,950	.....	18 00	9 00	.....	.....	3	....	3,000	no	no	.....	.....	738
3,300	3,000	15 00	11 25	6 00	.....	2	1	2,045	11	....	11	11	739
93,712	.....	17 50	12 75	.....	.....	10	4	17,880	yes	....	.....	.....	740
34,000	1,985	15 50	10 50	10 00	.....	2	4	2,500	yes	....	.....	.....	741
1,200	800	13 50	10 50	9 75	6 75	3	....	1,500	no	no	.....	.....	742
2,000	1,800	12 00	average	4 80	av.	....	....	.....	10	....	10	10	743
9,000	3,000	15 00	10 50	7 50	6 00	2	....	4,000	20	....	20	20	744
35,000	.....	15 00	12 00	.....	.....	10	5	14,500	10	....	10	10	745
22,000	both	.....	12 00	9 00	7 50	....	....	.....	....	....	.....	.....	746
10,920	.....	16 50	10 50	.....	.....	4	....	3,640	7½	....	.....	.....	747
1,000	300	10 00	.....	6 00	.....	3	....	2,400	15	....	.....	.....	748
10,200	8,806	15 00	12 00	9 00	7 50	4	3	3,890	10	....	10	10	749
2,800	2,050	.....	12 00	.....	7 00	....	....	.....	20	....	20	.....	750
4,000	2,000	12 00	9 00	9 00	6 50	2	1	3,500	25	....	25	25	751
7,000	4,800	15 00	10 50	13 50	7 50	3	....	3,200	5	....	5	5	752

FOODS.—TABLE No. 25.

6,350	2,550	16 50	9 50	5 50	3 50	2	2	4,375	6	....	.....	.....	753
1,000	.....	8 75	6 70	.....	.....	1	....	100	10	....	.....	.....	754
2,000	500	15 00	12 00	6 00	.....	....	....	.....	no	no	.....	.....	755
3,340	90	6 00	4 50	3 00	.....	6	....	368	5	....	5	5	756
37,000	28,500	16 00	10 00	7 00	4 50	15	3	33,000	20	....	20	20	757
4,000	2,160	23 00	9 00	10 00	4 25	6	2	7,384	yes	....	.....	.....	758
3,030	.....	10 50	.....	.....	.....	1	....	900	17	....	17	.....	759
10,236	.....	.....	9 00	.....	.....	....	....	.....	yes	....	.....	.....	760
600	.....	12 00	.....	.....	.....	....	....	.....	.....	....	.....	.....	761
11,000	.....	20 00	16 00	.....	.....	3	....	5,500	5	....	5	.....	762
4,900	2,400	9 00	average	for	all	3	1	4,700	.....	.....	.....	.....	763
117,879	5,442	16 00	average	6 10	av.	8	2	16,793	.....	.....	.....	.....	764
1,000	.....	10 00	average	.....	.....	2	....	500	no	no	.....	.....	765
5,000	.....	12 00	9 90	.....	.....	1	....	1,100	10	....	10	.....	766
18,000	9,500	16 00	12 00	14 00	8 00	3	....	4,000	10	....	10	10	767
1,800	5,000	15 00	9 00	7 50	5 25	....	....	.....	7½	....	.....	.....	768

RETURNS IN DETAIL

Dairy Products and Other

Office No.	Capital employed including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
769	20,240	313	67,000	yes	.....	60	211	398	310	4	2
770	15,000	278	40,000	10	.....	198	275	500	1,200	5	.....
771	349,206	305	1,092,638	.....	3⅓	921	791	19,692	999,441	94	63
772	25,000	300	40,000	20	.....	200	300	2,000	1,000	13	13
773	10,000	300	20,000	10	.....	95	75	750	500	3	.....
774	5,000	305	54,190	8	.....	24	41	.....	5,530	3	.....
775	195,000	306	324,215	54	.....	327	2,894	12,411	14,579	44	36
776	9,000	300	34,060	11	.....	55	175	275	.....	3	4

Breweries, Distilleries and Wine Factories

777	815,372	273	1,362,197	.....	7	3,843	5,202	27,502	961,465	129	102
778	65,000	300	90,000	no	no	80	500	500	12,000	50	50
779	90,000	306	50,000	.....	.....	415	768	.....	.....	11	.....
780	11,000	300	11,000	10	.....	175	175	500	7,600	2	.....
781	135,000	300	70,617	36	.....	266	706	1,200	.....	100	25
782	100,000	310	44,000	100	.....	100	600	700	.....	4	.....
783	150,000	300	350,000	100	.....	338	400	800	.....	80	100
784	14,000	313	25,000	4	.....	187	20	300	3,780	5	.....
785	5,000	300	5,000	no	no	9	35	.....	.....	5	.....
786	40,000	312	75,000	.....	.....	500	.....	.....	.....	15	.....
787	10,000	325	77,400	.....	.....	133	200	.....	.....	40	9
788	1,600,000	312	596,000	7½	.....	22,732	26,154	.....	.....	205	.....
789	30,000	130	5,000	.....	.....	315	76	.....	.....	4	3
790	85,000	300	15,000	3	.....	60	150	200	2,500	5	4
791	265,550	306	750,000	2	.....	381	3,163	.....	7,600	190	50
792	100 000	313	27,000	5	.....	470	620	500	3,750	8	.....
793	107,000	300	137,000	6	.....	191	1,339	800	.....	13	.....
794	273,000	313	216,069	5	.....	1,951	1,222	10,887	180,532	27	.....
795	32,200	313	22,328	.....	.....	355	265	.....	.....	5	.....
796	20,000	365	30,000	10	.....	700	150	1,500	2,000	8	.....
797	58,500	311	52,293	.....	6	233	600	100	5,240	20	.....
798	75,000	313	60,000	no	no	375	564	.....	37,705	11	1
799	9,000	313	27,000	.....	10	136	60	.....	.....	7	.....
800	4,000	313	6,000	no	no	42	32	.....	150	1	.....
801	100,000	310	26,880	1	.....	550	575	450	.....	8	.....
802	73,814	313	30,724	.....	25	365	246	.....	13,971	7	2
803	72,783	300	100,000	67	.....	300	303	3,000	1,200	25	.....
804	8,000	200	1,000	.....	.....	115	14	1,000	.....	1	.....
805	90,000	365	90,000	10	.....	1,648	886	7,000	.....	35	.....
806	60,000	311	145,530	23	.....	2,172	1,406	31,800	25,076	34	.....
807	.....	305	.....	no	no	900	800	.....	.....	33	2
808	370,000	300	300,000	10	.....	4,000	6,000	10,000	.....	60	.....
809	500,000	300	926,897	13	.....	509	6,809	.....	336,743	354	133
810	600,000	312	180,000	7	.....	4,500	2,500	60,000	86,110	44	.....

FROM MANUFACTURERS.

FOODS.—TABLE NO. 25.—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
1,225	both	6 00	.....	.....	.....	1	2	1,583	yes	....	yes	yes	769
2,950	.....	14 00	6 00	.....	.....	1	1	2,350	5	....	5	.....	770
60,613	23,248	24 00	10 50	8 10	6 60	8	1	9,336	no	no	.....	.....	771
4,000	1,000	6 17	average	1 54	.....	2	....	.....	4	....	.....	.....	772
900	.....	5 00	average	.....	.....	....	....	.....	10	....	.....	.....	773
1,475	.....	20 00	6 00	.....	.....	1	....	175	no	no	.....	.....	774
20,114	11,745	12 00	6 75	.....	6 45	5	....	6,417	5½	....	4	11	775
1,547	1,250	13 00	3 75	6 00	.....	2	1	2,300	.....	....	.....	.....	776

CIGAR AND TOBACCO FACTORIES.—TABLE NO. 26.

75,762	both	7 33	average	for	all	7	2	27,481	yes	....	.....	.....	777
28,000	both	5 60	average	for	all	2	....	3,100	no	no	.....	.....	778
8,740	.....	20 00	12 00	.....	.....	3	....	3,865	5	....	5	.....	779
1,248	.....	14 00	10 00	.....	.....	1	....	1,500	10	....	10	10	780
44,814	8,657	9 00	average	8 00	5 00	4	....	5,980	no	no	.....	.....	781
3,000	.....	17 60	15 00	.....	.....	2	....	1,800	7	....	7	7	782
42,000	27,624	7 74	average	for	all	2	2	2,900	25	....	.....	.....	783
2,600	.....	12 00	.....	.....	.....	1	1	2,564	.....	....	.....	.....	784
2,000	.....	8 00	average	.....	.....	....	....	.....	.....	....	.....	.....	785
9,828	.....	15 00	12 00	.....	.....	....	....	.....	10	....	10	.....	786
20,599	4,968	10 00	average	12 00	av.	....	1	800	.....	....	.....	.....	787
119,389	.....	11 20	average	.....	.....	17	....	28,142	.....	....	.....	.....	788
1,100	200	12 50	.....	.....	3 00	....	....	.....	.....	....	.....	.....	789
3,000	200	12 00	average	.....	1 00	2	....	.....	no	no	.....	.....	790
127,432	both	16 00	average	7 50	av.	8	1	18,000	yes	....	.....	.....	791
4,615	.....	11 50	average	.....	.....	3	....	3,440	5	....	5	.....	792
7,308	.....	14 00	10 00	.....	.....	3	3	7,000	5	....	5	.....	793
18,493	.....	15 90	12 00	.....	.....	4	2	6,348	10	....	10	.....	794
3,222	.....	12 60	average	.....	.....	....	1	520	.....	....	.....	.....	795
5,000	.....	18 00	12 10	.....	.....	2	....	1,500	10	....	.....	.....	796
11,101	.....	30 00	11 00	.....	.....	2	....	1,400	no	no	.....	.....	797
6,600	350	11 54	average	.....	6 73	....	....	.....	no	no	.....	.....	798
4,500	.....	12 00	9 60	.....	.....	2	....	3,000	10	....	10	.....	799
520	.....	.....	10 00	.....	.....	....	....	.....	no	no	.....	.....	800
4,615	.....	15 00	10 50	.....	.....	3	....	3,500	10	....	10	.....	801
4,007	461	11 00	average	.....	5 40	1	1	2,735	10	....	10	.....	802
24,000	.....	48 00	16 80	.....	.....	4	....	6,000	25	....	25	25	803
300	.....	9 00	.....	.....	.....	....	....	.....	.....	....	.....	.....	804
18,000	.....	20 00	12 00	.....	.....	3	....	7,720	10	....	.....	.....	805
19,687	.....	21 00	14 40	.....	.....	4	....	4,000	12½	....	12½	7	806
.....	.....	.....	.....	.....	.....	....	....	.....	no	no	.....	.....	807
.....	.....	.....	.....	.....	.....	4	....	10,000	25	....	25	25	808
283,856	45,000	15 00	10 00	14 00	7 00	13	....	44,136	10	....	7	10	809
34,700	.....	15 00	11 00	.....	.....	8	1	9,765	9	....	8	10	810

RETURNS IN DETAIL

CHEMICAL WORKS, MEDICINES

Office No.	Capital employed, including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
811	75,000	300	100,000	6	.....	219	898	20,000	.....	15	25
812	800,000	365	600,000	20	.....	57	639	395,000	240,000	225	.....
813	200,000	200	11,000	.....	.....	206	60	.....	.....	2	.....
814	500,000	300	399,845	21	.....	1,077	1,383	943,434	79,523	50	90
815	5,000	305	6,000	no	no	.....	.....	.....	.....	.....	.....
816	12,000	300	50,000	20	.....	300	250	1,000	2,000	2	.....
817	25,000	305	65,073	15	.....	603	380	.....	.....	8	.....
818	75,000	275	36,651	12	.....	87	94	7,200	1,296	7	.....
819	750,000	300	180,000	no	no	1,200	1,500	.....	.....	150	.....
820	40,000	310	25,000	10	.....	164	234	.....	.....	3	.....
821	7,000	....	5,000	no	no	32	.....	.....	.....	1	.....
822	60,000	300	150,000	25	.....	600	500	.....	.....	10	25
823	210,000	300	240,000	10	.....	.....	2,500	.....	157,000	25	30
824	470,531	305	503,911	27	.....	1,921	1,989	75,942	90,872	75	115

OIL REFINERIES, PAINT AND VARNISH

825	16,000	306	18,000	.....	.....	130	50	.....	.....	5	1
826	142,639	305	215,097	28½	.....	1,350	.....	2,700	.....	16	.....
827	.....	307	.....	.....	.....	.....	.....	98,088	.....	654	
828	27,000	305	47,000	10	.....	72	215	.....	.....	4	
828	80,000	313	72,223	17	.....	531	660	.....	.....	7	
830	10,000	300	20,000	2	.....	113	30	.....	.....	3	.....
831	15,000	300	20,000	.....	.....	38	75	.....	2,000	3	4
832	136,500	270	244,500	.....	.....	650	1,800	6,962	.....	45	20
833	15,000	300	52,000	10	.....	126	82	3,000	.....	4	1
834	120,000	310	202,000	20	.....	375	700	.....	28,000	28	.....
835	159,253	258	154,638	no	no	461	1,578	6,905	12,272	42	20
836	90,000	300	350,000	20	.....	355	1,200	.....	.....	15	4
837	48,254	300	29,834	30	.....	80	204	.....	.....	3	.....
838	300,000	310	426,000	5	.....	1,500	2,000	5,000	10,000	30	4

GAS WORKS, ELECTRIC LIGHT

839	206,820	365	135,602	.....	yes	2,026	124	9,668	4,697	5	.....
840	300,000	365	139,312	.....	5	3,966	1,284	.....	.....	50	1
841	369,726	365	173,000	21	.....	2,658	600	32,000	3,800	15	.....
842	60,000	365	8,000	5	.....	150	75	400	200	5	.....
843	40,000	365	7,500	5½	.....	90	128	2,000	.....	4	.....
844	15,000	365	4,973	8	.....	.....	95	1,000	2,236	1	.....
845	.....	365	.....	.....	.....	.....	19	.....	.....	5	.....
846	20,000	265	5,400	10	.....	125	67	500	5,400	2	.....
847	20,000	365	5,000	no	no	50	60	.....	.....	2	.....
848	25,000	365	5,998	.....	10	78	.....	6,000	.....	2	.....
849	154,000	365	20,000	10	.....	1,502	205	5,000	5,600	9	1
850	230,000	365	73,000	11	.....	.....	700	26,672	.....	13	.....
851	2,913,545	365	538,799	8¾	.....	15,774	3,099	262,397	.....	100	.....
852	1,101,748	365	241,173	11½	.....	4,589	2,295	155,370	.....	100	.....
853	66,700	365	13,965	yes	.....	.....	200	10,500	9,000	3	.....
854	100,000	365	95,000	10	.....	877	1,180	20,000	.....	22	1
855	114,469	365	18,874	7	.....	698	.....	1,277	836	5	.....
856	278,000	365	40,005	5	.....	2,261	328	5,000	1,557	7	.....
857	2,000	365	.....	.....	.....	96	.....	.....	.....	1	.....
858	10,000	365	35,000	no	no	90	150	.....	.....	7	.....
859	200,000	365	12,000	10	.....	345	210	40	.....	60	1
860	30,000	365	.....	5	.....	372	89	2,000	4,045	4	.....
861	8,756,749	365	2,464,368	11	.....	78,020	21,253	382,786	1,379,703	1,400	35

FROM MANUFACTURERS.

AND PERFUMES.—TABLE No. 27.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
8,033	6,430	10 71	average	5 14	av.	2	....	3,000	yes	....	.....	.....	811
144,000	.....	16 50	12 00	.....	.....	20	....	30,000	10	....	10	10	812
1,500	.....	22 75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	813
29,764	19,649	23 50	9 25	7 50	4 10	4	1	3 600	10	....	10	10	814
.....	.....	17 00	.....	12 50	.....	3	6	.....	no	no	.....	.....	815
1,200	.....	12 00	.....	.....	.....	5	1	9,500	10	....	10	10	816
5,234	.....	13 09	.....	.....	.....	1	....	1,500	12	....	12	12	817
4,600	.....	14 30	.....	.....	.....	2	....	2,800	yes	....	.....	.....	818
60,000	.....	13 50	10 50	.....	.....	7	....	8,500	no	no	.....	.....	819
1,800	.....	15 00	12 00	.....	.....	....	1	620	.....	....	.....	.....	820
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	821
3,500	5,000	12 00	.....	6 00	.....	5	2	9,000	25	....	.....	.....	822
30,000	both	10 91	average for	all		28	12	40,000	.....	....	.....	.....	823
78,693	both	25 50	12 00	7 00	4 50	31	19	93,500	15	....	15	15	824
FACTORIES.—TABLE No. 28.													
2,600	350	10 20	average	.....	5 00	....	....	.....	.....	....	.....	.....	825
11,450	.....	.....	14 88	.....	.....	3	....	5,575	11	....	.....	11	826
.....	.....	18 00	12 00	.....	7 68	87	19	.....	.....	....	.....	.....	827
2,840	728	14 00	average	7 13	av.	1	2	2,800	yes	....	.....	.....	828
4,712	650	.....	12 94	.....	6 25	1	....	1,800	10	....	10	.....	829
1,300	.....	16 00	10 00	.....	.....	1	....	1,000	no	no	.....	.....	830
1,664	1,500	.....	12 10	.....	6 00	1	2	520	no	no	.....	.....	831
22,645	6,072	14 40	9 60	.....	6 00	2	2	.....	.....	.....	.....	.....	832
2,460	325	12 75	average	.....	5 50	3	1	4,000	.....	....	.....	.....	833
14,125	.....	27 00	12 00	.....	.....	3	2	19.200	10	....	10	10	834
22,150	4,673	14 40	9 60	6 25	.....	3	2	6,980	yes	....	.....	.....	835
13,000	1,490	17 33	average	7 00	av.	....	....	.....	5	....	.....	.....	836
1,492	.....	16 50	5 00	.....	.....	.....	.....	.....	.....	....	.....	.....	837
22,500	both	15 00	12 00	.....	6 00	10	10	25,000	5	....	5	5	838
HEATING AND POWER WORKS.—TABLE No. 29.													
4,950	.....	13 50	11 10	.....	.....	3	1	4,936	10	....	10	10	839
29,313	550	12 90	10 50	10 00	.....	7	1	7,000	5	....	.....	.....	840
10,180	.....	21 00	13 50	.....	.....	6	2	4,680	12½	....	12½	12½	841
.....	.....	18 00	12 00	.....	.....	....	....	.....	no	no	.....	.....	842
2,700	.....	26 00	.....	.....	.....	.....	.....	.....	no	no	.....	.....	843
1,035	.....	20 00	.....	.....	.....	1	....	206	no	no	.....	.....	844
2,303	.....	13 50	9 00	.....	.....	2	1	2,020	no	no	.....	.....	845
1,750	.....	12 00	9 00	.....	.....	2	....	200	no	no	.....	.....	846
900	.....	9 00	.....	.....	.....	1	....	120	.....	....	.....	.....	847
700	.....	7 00	.....	.....	.....	1	....	350	no	no	.....	.....	848
5,390	300	10 50	.....	6 00	.....	1	1	1,800	15	....	.....	.....	849
15,640	.....	23 33	16 67	.....	.....	2	3	1,700	8	....	8	.....	850
77,820	.....	18 00	12 00	.....	.....	65	12	31,626	2	....	2	2	851
81,060	.....	15 75	11 25	.....	.....	10	1	10,226	2	....	2	2	852
2,600	.....	18 00	11 25	.....	.....	.....	.....	.....	yes	....	.....	.....	853
15,600	520	18 00	12 00	10 00	.....	3	1	4,500	1	....	1	.....	854
3,612	.....	23 00	11 50	.....	.....	1	....	300	15	....	15	15	855
4,136	.....	12 50	10 80	.....	.....	1	2	2 945	.....	1¾	1¾	.....	856
416	.....	8 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	857
3,000	.....	8 60	average	.....	.....	.....	.....	.....	.....	.....	.....	.....	858
15,000	416	21 00	12 00	8 00	.....	4	1	4,580	no	no	.....	.....	859
2,888	.....	20 00	12 00	.....	.....	1	1	350	5	....	5	.....	860
678,529	both	.....	.....	.....	.....	50	4	83,714	7	....	7	7	861

RETURNS IN DETAIL

PRINTING, PUBLISHING AND

Office No.	Capital employed including plant.	No. of days in operation during 1912.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
862	19,000	300	21,507	50	.....	125	147	1,500	600	9	3
863	5,000	305	3,200	10	.....	56	52	200	.....	5	2
864	7,620	312	6,885	50	.....	49	175	1,051	2,226	6	20
865	6,500	310	1,023	no	no	28	43	50	125	1	2
866	40,000	307	60,000	10	.....	.....	6,000	.....	.....	38	2
867	45,000	300	65,000	50	.....	750	440	1,000	10,000	26	6
868	3,800	310	3,925	.....	9	15	26	.....	.....	4	.....
869	7,000	313	6,000	20	.....	15	60	500	240	5	.....
870	40,000	305	57,000	.....	7	215	475	12,000	15,000	30	10
871	246,668	300	222,579	13	.....	829	218	4,357	9,586	75	25
872	100,000	305	120,000	10	.....	304	882	1,500	.....	32	5
873	40,000	306	51,070	10½	.....	443	264	.....	18,717	16	.....
874	85,000	305	234,000	5	.....	700	1,300	4,000	.....	130	5
875	4,000	312	4,300	10	.....	18	14	.....	.....	1	4
876	200,000	306	275,000	yes	.....	3,000	1,500	.....	20,000	120	40
877	27,000	305	31,065	no	no	409	301	6,169	10,734	21	4
878	100,000	305	82,335	17	.....	286	190	1,900	3,284	54	42
879	40,000	300	110,000	10	.....	420	1,344	6,500	7,250	60	5
880	2,000	250	3,500	.....	.....	.....	.....	.....	.....	.....	.....
881	119,700	300	106,000	1½	.....	305	500	.....	.....	45	19
882	2,800	300	3,150	25	.....	15	43	.....	150	1	2
883	50,000	305	40,000	.....	.....	183	173	.....	5,379	16	.....

BRICK, TILE AND PORTLAND

884	1,000,000	240	300,000	5	.....	700	1,100	.....	.....	150	.....
885	300,000	250	100,000	10	.....	400	1,500	.....	10,000	45	.....
886	46,630	297	56,632	.....	12	110	600	.....	.....	17	.....
887	5,000	243	4,000	20	.....	38	15	.....	.....	3	.....
888	25,000	150	11,375	.....	.....	552	.....	.....	.....	20	.....
889	412,337	....	.....	.....	.....	.....	.....	.....	.....	.....	.....
890	84,317	305	24,242	no	no	173	481	3,000	.....	12	.....
891	44,000	305	10,000	no	no	230	.....	2,200	.....	18	.....
892	50,000	130	25,000	.....	10	147	400	1,000	.....	22	.....
893	250,000	160	52,000	.....	2	625	431	.....	.....	45	.....
894	16,000	310	17,801	no	no	179	53	124	3,136	5	.....
895	45,000	220	20,000	.....	20	242	.....	.....	.....	65	.....
896	160,000	300	233,821	15	.....	926	1,270	1,500	86,190	150	.....
897	20,000	182	17,028	5	.....	50	294	1,500	5,500	30	.....
898	7,000	304	15,000	no	no	30	47	536	5,417	12	.....
899	15,500	300	13,253	.....	10	.....	23	.....	.....	.....	.....
900	10,000	305	12,000	no	no	150	125	8,000	.....	8	.....
901	300,000	250	148,500	10	.....	.....	.....	.....	.....	65	.....
902	5,726 351	366	7,128,214	60	.....	22,847	19,072	1,137,721	.....	2,312	.....
903	75,000	305	58,415	3½	.....	150	360	2,485	.....	40	.....
904	22,307	200	12,256	.....	7	155	620	.....	6,275	13	55
905	292,400	313	204,448	6	.....	976	2,375	1,875	43,421	197	.....
906	6,000	300	.....	no	no	266	62	.....	.....	2	10
907	40,000	305	3,000	no	no	225	.....	1,000	.....	14	.....
908	20,000	300	18,000	10	.....	220	300	.....	3,500	9	.....

FROM MANUFACTURERS.

ALLIED TRADES.—TABLE No. 30.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male.		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
4,483	700	18 00	9 00	6 00	.....	2	....	1,658	10	....	.....	.....	862
1,250	468	12 00	3 00	4 50	.....	.....	.....	.....	15	....	.....	.....	863
2,009	1,389	15 00	10 00	9 00	3 50	1	....	1,560	no	no	.....	.....	864
779	205	10 00	8 00	.....	4 00	.....	.....	.....	yes	....	.....	.....	865
31,000	both	15 20	average	for	all	.....	.....	.....	20	....	20	20	866
15,700	1,500	22 00	5 50	.....	5 00	3	5	11,400	10	....	10	10	867
1,550	.....	12 00	.....	4 50	.....	2	....	2,055	5	....	.....	.....	868
2,500	.....	18 00	4 50	.....	.....	2	....	2,500	20	....	20	.....	869
20,500	2,500	17 50	.....	6 50	4 50	.....	.....	.....	12½	....	12½	.....	870
41,933	7,150	17 50	8 00	6 50	5 00	6	10	13,780	10	....	10	10	871
20,700	1,820	16 50	9 00	8 00	5 00	6	3	11,740	yes	....	.....	.....	872
11,355	.....	13 90	average	.....	.....	9	3	10,411	13	....	13	8	873
85,000	3,000	13 00	average	12 00	aver	12	6	36,000	5	....	.....	.....	874
1,000	1,200	19 25	.....	12 00	3 25	.....	.....	.....	10	....	10	10	875
62,000	11,000	24 25	7 75	11 00	5 25	13	8	25,000	10	....	10	10	876
9,995	1,560	20 00	15 00	8 50	6 50	3	....	4,680	15	....	15	.....	877
15,249	26,598	27 00	8 00	11 50	5 50	95	60	6,751	5	....	5	5	878
29,000	1,200	27 00	12 00	9 00	.....	6	2	12,000	no	no	.....	.....	879
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	880
34,600	6,200	18 00	9 00	6 00	5 00	21	9	30,250	9	....	9	.....	881
624	456	12 00	6 00	.....	.....	1	....	700	.....	....	.....	.....	882
11,493	.....	.....	.....	.....	.....	3	2	4,200	.....	....	.....	.....	883

CEMENT WORKS.—TABLE No. 31.

45,000	.....	16 50	10 80	.....	.....	3	1	2,700	10	....	10	10	884
31,889	.....	18 00	10 80	.....	.....	3	....	3,500	10	....	10	10	885
11,892	.....	13 00	average	.....	.....	1	....	1,385	no	no	.....	.....	886
1,532	.....	12 80	average	.....	.....	.....	.....	.....	.....	....	.....	.....	887
6,300	.....	12 50	average	.....	.....	1	....	1,200	.....	....	.....	.....	888
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	889
7,716	.....	13 50	12 00	.....	.....	3	1	3,613	no	no	.....	.....	890
9,500	.....	18 00	.....	.....	.....	1	....	1,500	5	....	5	.....	891
8,700	.....	19 50	.....	.....	.....	.....	.....	.....	no	no	.....	.....	892
16,051	.....	21 00	13 50	.....	.....	1	....	990	20	....	20	.....	893
3,407	.....	18 18	11 25	.....	.....	1	1	1,864	no	no	.....	.....	894
11,229	.....	15 00	13 50	.....	.....	2	....	1,600	no	no	.....	.....	895
115,720	.....	26 25	16 50	.....	.....	16	2	19,000	no	no	.....	.....	896
9,000	.....	10 00	average	.....	.....	.....	.....	.....	5	....	.....	.....	897
5,878	.....	15 00	11 40	.....	.....	3	....	2,666	no	no	.....	.....	898
.....	.....	.....	.....	.....	.....	.....	.....	.....	10	....	.....	.....	899
5,000	.....	15 00	8 00	.....	.....	.....	.....	.....	no	no	.....	.....	900
39,000	.....	18 00	11 85	.....	.....	4	....	.....	10	....	10	10	901
1,761,607	.....	23 25	14 25	.....	.....	140	14	207,274	10	....	10	10	902
19,408	.....	9 70	average	.....	.....	2	....	3,317	yes	....	.....	.....	903
3,902	2,841	15 00	9 00	6 00	5 00	1	....	1,814	no	no	.....	.....	904
123,465	.....	14 25	9 90	.....	.....	12	1	16,536	no	no	.....	.....	905
1,150	2,000	11 50	average	.....	4 00	.....	.....	.....	15	....	.....	.....	906
8,000	.....	11 20	average	.....	.....	1	....	1,500	5	....	.....	.....	907
3,700	.....	13 20	average	.....	.....	.....	1	2,000	5	....	.....	.....	908

RETURNS IN DETAIL

BRICK, TILE AND PORTAND

Office No.	Capital employed including plant.	No. of days in operation during 1913.	Gross value of products manufactured during year.	Production during year.		Taxes paid during year.	Insurance paid during year.	Amount expended on permanent repairs or plant enlargement.	Other uncontrollable expenses.	Total No. of employees, wage-earners only.	
				Increased.	Decreased.					Male.	Female.
	$		$	%	%	$	$	$	$		
909	2,000	90	2,500	no	no	24	.....	.....	700	6	.....
910	60,000	300	50,000	10	.....	300	600	500	1,000	25	.....
911	118,000	250	250,000	50	.....	428	1,114	22.289	11,683	25	.....
912	170,000	....	.....	.....	.....	118	.....	.....	.....	.....	.....
913	.....	125	.....	yes	.....	.....	.....	.....	.....	15	.....
914	155,686	322	204,975	60	.....	93	455	.....	2,335	45	245
915	500,000	206	131,442	.....	25	643	749	2,362	12,679	75	.....

MISCELLANEOUS

916	5,000	306	25,000	10	.....	.....	.....	50	.....	5	1
917	79,517	300	41,196	3¼	.....	567	509	20,957	10,163	9	14
918	75,000	365	100,000	no	no	94	768	.....	.....	7	16
919	30,000	313	119,613	10	.....	147	470	.....	.....	30	.....
920	75,000	310	150,000	25	.....	270	600	8,000	.....	35	25
921	75,000	305	250,000	25	.....	408	525	1,000	11,900	15	.....

FROM MANUFACTURERS.

CEMENT WORKS.—TABLE NO. 31.—Continued.

Total wages paid during year to wage-earners.		Weekly wages paid.				Total No. salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
		Male		Female.									
Male.	Female.	Skilled.	Unskilled.	Skilled.	Unskilled.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$	$ c.	$ c.	$ c.	$ c.			$	%	%	%	%	
1,000	.....	12 00	9 00	.....	.....	....	....	.....	no	no	.....	.....	909
15,000	.....	12 00	average	.....	.....	3	....	5,000	10	....	10	10	910
11,068	.....	18 00	13 50	.....	.....	5	3	6,091	no	no	.....	.....	911
.....	.....	.....	.....	.....	.....	....	....	.....	.....	....	.....	.....	912
.....	.....	24 00	.....	.....	.....	....	....	.....	yes	....	.....	.....	913
20,095	31,679	16 00	8 00	5 00	.....	5	1	7,016	no	no	.....	.....	914
33,148	.....	15 00	9 00	.....	.....	4	....	6,200	same	same	.....	.....	915

INDUSTRIES.—TABLE NO. 32.

3,000	490	18 00	8 00	10 00	.....	2	1	2,000	10	....	.....	.....	916
6,057	3,710	20 00	6 50	.....	5 20	6	....	4,717	10	....	12	8	917
4,445	4,142	15 00	9 00	6 00	.....	2	1	3,000	5	....	5	5	918
21,081	.....	18 00	12 00	.....	.....	10	1	10,289	20	....	.....	.....	919
25,000	9,000	13 73	average	7 00	av.	3	3	.....	10	....	10	10	920
6,792	.....	24 00	15 00	.....	.....	10	4	22,968	15	....	15	15	921

WAGES AND THEIR PROPORTION TO PRODUCT.

As 89 of the establishments included in the previous tables omit necessary details there are only 832 given in the following tables which show the annual and daily wages paid in the various industries and the proportion they bear to the amount of the gross product. In the average percentage of wages to product there has been an increase of 38.18 per cent. as compared with the previous year.

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.

LUMBER MANUFACTURERS.—TABLE No. 1.

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
1	20	150	6,000	25,000	300 00	2 00	24	76	1
2	66	250	28,100	150,000	425 75	1 70	19	81	2
3	58	305	41,438	50,000	714 45	2 34	83	17	3
4	8	75	3,600	5,000	450 00	6 00	72	28	4
5	243	156	99,279	403,614	408 56	2 62	25	75	5
6	52	100	11,200	65,000	215 38	2 15	17	83	6
7	17	260	6,000	24,000	352 94	1 32	25	75	7
8	11	137	3,380	13,419	307 27	2 24	25	75	8
9	206	170	90,000	700,000	436 89	2 57	13	87	9
11	48	300	26,800	48,000	558 33	1 86	56	44	11
12	5	92	1,104	5,684	220 80	2 40	19	81	12
13	228	300	132,355	660,000	580 50	1 94	20	80	13
14	307	300	120,143	360,000	392 31	1 31	33	67	14
16	52	180	17,000	125,000	326 92	1 82	14	86	16
17	55	300	16,000	34,500	290 09	1 00	46	54	17
18	53	300	24,930	50,000	470 38	1 57	50	50	18
19	81	250	33,500	75,000	413 58	1 66	45	55	19
20	20	105	28,000	50,000	1,400 00	13 33	56	44	20
21	8	200	1,900	4,000	237 50	1 19	47	53	21
22	27	313	11,210	15,000	415 56	1 32	75	25	22
23	14	100	4,300	8,000	307 14	3 07	54	46	23
24	122	113	31,044	120,000	254 46	2 25	26	74	24
25	112	160	59,454	222,218	538 39	3 36	27	73	25
26	9	98	2,130	5,800	236 67	2 42	37	63	26
29	55	300	38,691	147,913	703 47	2 34	26	74	29
30	4	200	1,600	17,000	400 00	2 00	9	91	30
31	25	130	6,500	25,000	260 00	2 00	26	74	31
32	23	300	12,000	40,000	521 74	1 74	30	70	32
33	10	30	400	1,000	40 00	1 33	40	60	33
34	2	150	600	2,000	300 00	2 00	30	70	34
35	515	175	230,000	1,000,000	446 60	2 55	23	77	35
36	85	250	37,800	175,000	444 80	1 78	22	78	36
37	13	110	3,400	12,000	261 54	2 37	28	72	37
38	6	150	3,000	5,000	500 00	3 33	60	40	38
39	79	300	36,000	50,000	455 70	1 52	72	28	39
40	12	300	7,000	175,000	583 33	1 94	4	96	40
41	58	300	37,924	400,000	653 86	2 08	9	91	41
42	205	313	17,635	223,437	860 12	2 75	12	88	42

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

LUMBER MANUFACTURERS.—TABLE No. 1.—*Continued.*

Schedule No	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
43	9	100	1,800	14,000	200 00	2 00	13	87	43
44	4	300	1,625	25,000	406 25	1 35	6	94	44
46	6	200	1,200	5,000	200 00	1 00	24	76	46
48	76	100	36,600	60,000	481 55	4 81	61	39	48
49	8	300	1,796	36,000	224 50	73	5	95	49
50	16	200	6,400	10,000	400 00	2 00	64	36	50
51	6	300	2,800	5,000	466 75	1 55	56	44	51
52	15	100	5,000	80,000	333 00	3 00	6	94	52
53	149	162	51,520	400,000	345 75	2 13	13	87	53
54	21	138	5,750	22,157	274 00	1 98	26	74	54
55	12	175	5,950	11,000	495 01	2 82	54	46	55
56	255	180	149,500	600,000	664 46	3 69	25	75	56
57	78	305	47,760	100,000	612 00	2 01	48	52	57
58	11	305	4,500	12,000	409 00	1 34	37	63	58
59	2,282	313	1,552,480	3,418,000	649 20	2 07	45	55	59
61	15	300	5,100	3,000	340 00	1 13	17	83	61
62	16	150	4,300	12,000	269 00	1 70	37	63	62
63	2	300	375	1,600	185 00	32	23	77	63
64	5	50	1,000	4,500	200 00	40	22	78	64
65	328	300	181,000	800,000	551 40	1 84	23	77	65
66	40	160	39,000	100,000	975 00	6 09	39	61	66
67	81	300	20,900	60,000	258 20	86	35	65	67
68	187	305	41,500	200,000	221 92	73	20	80	68
69	3	25	100	900	34 00	1 36	11	89	69
	6,539	average 208	3,399,373	11,472,742	average 417 44	average 2 26	average 31	average 69	

PLANING MILLS, SASH AND DOOR FACTORIES, ETC.—TABLE No. 2.

70	53	295	40,767	402,897	769 05	2 27	10	90	70
71	8	250	3,750	7,500	468 80	1 87	50	50	71
72	252	300	130,000	500,000	515 90	1 72	26	74	72
73	17	300	10,550	38,350	620 60	2 09	28	72	73
74	81	311	45,084	248,000	556 60	1 79	10	90	74
75	12	305	6,600	55,000	550 00	1 80	12	88	75
76	67	300	24,664	129,690	368 00	1 23	19	81	76
78	54	300	33,500	112,000	620 40	2 10	30	70	78
79	72	290	29,748	184,379	413 06	1 43	16	84	79
80	20	300	24,950	63,800	1,247 50	4 18	39	61	80
81	17	305	11,544	150,000	678 50	2 22	8	92	81
82	11	295	2,167	44,400	651 50	2 21	16	84	82
83	53	300	31,500	140,000	594 30	1 98	22	78	83
84	15	60	925	8,000	61 75	1 03	11	89	84
85	25	280	10,000	25,000	400 00	1 43	40	60	85
86	40	305	26,900	25,000	672 50	2 50	10	90	86
87	63	300	46,000	150,000	730 16	2 43	31	69	87
88	7	300	4,680	7,500	668 52	2 23	66	34	88
89	34	313	13,945	61,700	410 15	1 31	23	77	89
90	100	300	42,500	125,000	425 10	1 42	34	66	90
91	4	200	2,000	10,000	500 00	2 50	20	80	91
92	117	150	50,000	200,000	427 35	2 85	25	75	92
93	73	300	52,133	55,000	714 15	2 38	14	86	93

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

PLANING MILLS, SASH AND DOOR FACTORIES, ETC.—TABLE NO. 2.—*Continued.*

Schedule No	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
94	42	300	16,500	30,000	345 24	1 15	55	45	94
97	107	300	68,000	188,000	635 04	2 11	37	63	97
98	5	312	1,500	10,000	300 00	96	15	85	98
100	5	285	2,000	8,000	400 00	1 44	25	75	100
101	52	305	35,000	250,000	673 07	2 21	14	86	101
102	11	313	8,450	60,000	768 18	2 45	14	86	102
105	12	305	7,560	10,000	630 00	2 06	75	25	105
106	6	305	3,000	20,000	500 00	1 64	15	75	106
107	22	290	20,000	40,000	909 09	3 13	50	50	107
108	12	300	6,810	50,000	567 50	1 89	14	86	108
109	5	300	2,400	10,000	480 00	1 60	24	76	109
110	2	150	216	3,200	108 00	72	7	93	110
115	50	300	33,000	290,000	660 00	2 20	11	89	115
116	93	305	57,057	616,067	613 52	2 01	9	91	116
	1,619	Average 282	910,400	4,328,483	Average 885 44	Average 1 96	Average 25	Average 75	

WOODWORKING FACTORIES, SPECIALTIES IN WOODENWARE.—TABLE NO. 3.

117	6	200	1,500	10,000	250 00	1 25	15	85	117
118	147	295	96,969	378,220	659 66	2 23	26	74	118
119	167	302	27,511	92,486	164 73	55	30	70	119
120	80	250	29,874	144,500	373 42	1 49	21	79	120
122	8	312	3,725	6,825	465 62	1 46	55	45	122
123	130	300	48 216	134,580	267 87	89	36	64	123
124	4	300	3,600	8,000	900 00	3 00	45	55	124
125	30	300	12,000	30,000	400 00	1 33	40	60	125
126	38	270	20,500	75,000	539 47	2 00	27	73	126
127	69	28	37,867	60,000	548 71	1 60	34	66	127
128	34	295	24,050	35,000	707 32	2 40	68	32	128
129	42	285	17,368	32,000	413 50	1 45	54	46	129
130	26	275	11,995	112,000	460 34	1 67	10	90	130
131	13	225	3,000	8,500	231 00	1 15	38	62	131
132	47	175	11,050	35,000	235 12	1 34	32	68	132
134	12	305	8,500	35,000	708 33	2 32	24	74	134
135	57	305	37,935	97,400	665 53	2 14	39	61	135
136	47	300	21,040	106,482	447 66	1 49	19	81	136
137	91	300	37,475	180,000	411 81	1 37	20	80	137
138	35	300	24,027	91,262	685 91	2 28	26	74	138
139	27	300	11,500	19,000	425 93	1 42	60	40	139
140	114	305	48,042	100,000	421 42	1 38	48	52	140
141	6	300	2,800	10,000	466 66	1 55	28	72	141
142	6	300	3,500	6,000	583 33	1 94	58	42	142
143	53	300	28,000	135,000	528 30	1 76	21	89	143
144	77	305	23,760	153,000	308 57	1 01	16	84	144
145	6	312	1,800	12,500	300 00	96	15	85	145
146	4	300	1,800	3,000	450 00	1 50	60	40	146
147	5	300	5,530	14,000	1,106 00	3 69	39	61	147
149	12	305	5,380	31,800	448 25	1 49	17	83	149
150	51	121	9,600	20,000	188 22	1 50	48	52	150

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

WOODWORKING FACTORIES, SPECIALTIES IN WOODENWARE.—TABLE NO. 3.—*Continued.*

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
151	36	300	18,500	60,000	513 90	1 71	30	70	151
152	4	260	2,000	5,250	500 00	1 54	39	61	152
154	54	100	15,000	100,000	277 77	2 78	15	85	154
155	23	306	13,250	30,000	576 80	1 88	44	56	155
156	10	280	6,991	10,385	699 10	2 49	69	31	156
157	42	300	21,300	80,000	507 14	1 69	27	73	157
158	44	300	19,632	110,000	446 18	1 48	18	82	158
159	8	305	4,400	8,000	550 00	1 47	55	45	159
160	49	300	23,400	40,000	477 55	1 59	58	42	160
161	130	288	66,086	188,800	508 35	1 76	35	65	161
	1,844	Average 280	810,473	2,807,990	Average 488 11	Average 1 71	Average 36	Average 64	

FURNITURE MANUFACTURERS; BANK AND OFFICE FITTINGS.—TABLE NO. 4.

162	162	303	95,450	310,000	527 47	1 74	31	69	162
163	42	300	18,551	80,000	465 50	1 55	23	77	163
164	96	300	49,840	225,000	519 06	1 73	20	80	164
165	18	300	10,555	74,930	591 90	1 97	14	86	165
166	422	298	140,060	384,953	656 52	2 24	38	62	166
167	110	305	70,000	175,000	636 36	2 09	40	60	167
168	60	298	40,000	133,000	666 75	2 27	31	69	168
169	192	300	88,537	273,000	461 13	1 53	33	67	169
170	422	300	119,500	450,000	259 47	86	27	73	170
171	62	300	31,660	100,000	510 64	1 70	31	69	171
172	48	300	19,573	71,000	407 95	1 36	27	73	172
173	71	300	40,300	123,000	567 60	1 89	33	67	173
174	48	305	27,700	78,000	577 80	1 89	36	64	174
175	69	300	32,008	87,028	463 71	1 55	37	63	175
176	159	300	70,000	200,000	440 25	1 47	35	65	176
177	140	300	63,000	200,000	450 00	1 50	32	68	177
178	57	300	26,500	90,000	464 91	1 33	29	71	178
179	145	300	73,675	234,729	408 10	1 36	31	69	179
180	115	304	66,000	150,000	574 35	1 89	40	60	180
181	57	295	28,420	76,751	498 59	1 69	27	73	181
182	92	280	56,925	153,882	618 75	2 21	37	63	182
183	58	300	28,500	105,000	491 38	1 70	27	73	183
184	33	300	13,780	50,000	417 55	1 39	24	76	184
185	35	302	20,964	42,000	598 96	1 98	50	50	185
186	125	300	82,200	360,000	657 76	2 19	24	76	186
187	68	300	28,700	150,000	422 59	1 41	19	91	187
188	19	300	11,600	34,459	610 52	2 03	34	66	188
189	53	300	23,831	75,000	449 64	1 50	32	68	189
190	69	300	32,500	100,000	471 02	1 57	33	67	190
191	64	300	36,800	121,000	575 00	1 92	30	70	191
192	132	300	66,000	180,000	500 00	1 67	37	63	192
193	107	305	47,500	200,000	443 92	1 45	24	76	193
194	34	305	18,576	31,020	546 35	1 79	60	40	194
195	39	305	16,800	52,000	430 77	1 42	32	68	195
196	69	300	13,000	122,000	188 41	62	11	89	196
197	134	300	40,350	100,000	301 12	1 01	40	60	197
198	22	300	12,000	65,000	549 09	1 83	18	82	198

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

FURNITURE MANUFACTURERS; BANK AND OFFICE FITTINGS, TABLE No. 4.—*Continued.*

Schedule No	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
199	76	300	34,000	100,000	447 37	1 49	34	66	199
200	41	300	24,800	50,000	604 87	2 01	49	51	200
201	12	300	7,200	15,000	600 00	2 00	48	52	201
202	50	300	26,118	55,131	522 36	1 74	47	53	202
203	84	300	38,035	100,000	452 79	1 51	18	82	203
204	166	300	86,000	300,000	518 70	1 73	25	75	204
205	350	290	150,000	472,000	428 57	1 48	35	65	205
	4,229	Average 299	2,034,498	6,549,883	Average 499 90	Average 1 66	Average 32	Average 68	

CARRIAGES AND OTHER VEHICLES AND PARTS, AND MOTORS.—TABLE No. 5.

206	380	300	182,000	800,000	478 95	1 59	23	77	206
207	12	300	7,900	20,700	658 33	2 19	39	61	207
208	18	275	10,600	50,000	588 88	2 14	21	79	208
209	70	300	32,420	166,971	463 14	1 54	19	81	209
210	65	312	40,932	150,000	628 95	2 04	27	73	210
211	4	305	3,020	2,000	755 00	2 47	15	85	211
212	12	300	5,200	24,000	433 33	1 44	21	79	212
213	21	300	9,350	30,000	447 14	1 49	31	69	213
214	131	287	85,084	286,818	641 87	2 24	29	31	214
215	184	308	85,678	209,214	465 60	1 51	41	59	215
216	190	313	98,328	365,000	517 51	1 65	27	73	216
217	27	300	15,000	57,000	555 55	1 85	28	72	217
218	1,250	305	318,515	5,000,000	250 83	82	7	93	218
219	40	300	25,198	88,500	629 95	2 09	28	72	219
220	96	300	52,758	246,794	549 56	1 83	22	78	220
221	14	313	5,600	25,000	400 00	1 28	22	78	221
222	194	305	130,849	648,855	674 48	2 21	20	80	222
223	3	305	1,000	3,000	333 33	1 09	33	67	223
224	178	300	102,306	388,000	574 75	1 91	26	74	224
225	18	300	13,540	40,000	752 22	2 51	34	66	225
226	318	300	166,000	700,000	522 10	1 74	24	76	226
227	58	307	42,716	214,930	736 48	2 07	20	80	227
228	55	300	33,350	120,000	606 36	2 02	28	72	228
229	14	365	6,600	40,000	471 43	1 29	16	84	229
230	27	270	12,500	50,000	462 96	1 72	25	75	230
231	12	310	7,820	20,000	651 66	2 10	39	61	231
	3,391	Average 303	1,494,264	9,746,782	Average 548 09	Average 1 80	Average 26	Average 74	

AGRICULTURAL IMPLEMENTS, DAIRY MACHINERY, ETC.—TABLE No. 6.

232	42	300	19,828	89,600	472 10	1 57	22	78	232
233	138	305	92,000	303,000	666 60	2 18	30	70	233
234	104	288	51,515	210 000	495 33	1 68	24	76	234
235	74	300	47,600	200,000	643 24	2 14	24	76	235
236	30	300	9,749	90,000	324 96	1 08	10	90	236
237	3	300	1,200	9,000	400 00	1 33	12	88	237
238	30	305	20,238	179,561	641 26	2 12	11	89	238

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

AGRICULTURAL IMPLEMENTS, DAIRY MACHINERY, ETC., TABLE No. 6.—*Continued.*

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
239	10	285	5,964	32,000	596 40	2 13	19	81	239
240	8	250	2,000	8,000	250 00	1 00	25	75	240
241	80	305	37,373	300,000	467 16	1 53	12	88	241
242	51	85	13,100	14,000	257 40	2 44	93	7	242
243	23	300	12,302	35,000	534 87	1 79	35	65	243
244	52	300	23,780	65,000	438 70	1 46	36	64	244
245	61	305	36,540	200,000	599 01	1 63	18	82	245
246	100	280	51,820	221,372	518 20	1 85	23	77	246
247	310	305	150,385	2,200,000	485 11	1 59	7	93	247
248	126	308	39,270	130,350	319 60	1 03	30	70	248
249	9	305	3,421	10,000	380 11	1 24	34	66	249
250	6	300	2,830	18,200	471 60	1 57	16	84	250
252	31	300	13,900	32,000	448 38	1 49	43	57	252
254	416	300	194,400	1,000,000	469 71	1 56	19	81	254
	1,704	Average 287	830,015	5,346,483	Average 470 46	Average 1 60	Average 26	Average 74	

PIANO, ORGAN AND MUSICAL INSTRUMENT FACTORIES.—TABLE No. 7.

255	115	305	72,231	274,921	628 90	2 06	27	73	255
256	77	300	34,500	175,000	448 50	1 50	20	80	256
257	2	290	1,015	5,300	500 75	1 72	20	80	257
258	31	300	23,250	125,000	745 35	2 46	19	81	258
259	33	300	20,320	68,778	615 75	2 05	30	70	259
260	25	300	8,896	24,727	355 84	1 12	36	64	260
	283	Average 299	160,212	673,726	Average 549 18	Average 1 82	Average 25	Average 75	

WOOD-PULP, FACTORIES, PAPER MILL, STATIONERY.—TABLE No. 8.

261	212	279	104,725	678,893	493 98	1 77	15	85	261
262	198	300	57,000	212,000	292 92	97	27	73	262
263	134	300	71,000	300,000	529 83	1 76	24	76	263
264	10	300	3,500	8,000	350 00	1 19	44	66	264
265	26	300	9,500	30,000	365 38	1 25	32	68	265
266	60	305	21,000	75,000	350 00	1 10	28	72	266
267	19	300	13,500	50,000	710 52	2 37	27	73	267
268	12	300	6,055	46,736	504 58	1 68	13	87	268
269	28	300	12,000	34,000	428 57	1 43	35	65	269
270	43	312	13,500	75,000	313 95	1 00	18	82	270
272	36	305	15,913	140,400	442 58	1 45	21	79	272
273	49	308	22,707	60,000	463 40	1 50	38	62	273
274	84	305	27,721	154,000	330 01	1 08	18	82	274
275	43	300	19,000	140,000	441 86	1 47	14	86	275
276	25	300	7,200	30,000	288 00	96	24	76	276
277	127	305	87,000	570,000	685 31	2 25	15	85	277
278	150	305	60,000	450,000	400 00	1 64	13	87	278
279	23	309	18,000	45,000	782 61	2 53	4	96	279
280	23	305	7,500	30,000	326 81	1 07	25	75	280
281	449	308	339,728	1,568,989	756 63	2 45	22	78	281
282	17	300	8,000	18,000	470 59	1 57	44	56	282
	1,768	Average 302	924,549	4,716,018	Average 463 22	Average 1 55	Average 24	Average 76	

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.— *Continued.*

FOUNDRIES, ROLLING MILLS, BRIDGE AND STRUCTURAL IRON.—TABLE No. 9.

Schedule No	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
283	165	298	88,347	503,488	535 44	1 46	17	83	283
284	212	297	110,265	535,789	472 94	1 59	21	79	284
285	403	308	237,096	1,141,996	588 33	1 91	22	78	285
286	7	305	3,150	5,000	450 00	1 48	63	37	286
287	6	290	1,593	8,400	265 50	92	20	80	287
289	8	305	4,300	9,000	527 50	1 73	48	52	289
290	2	306	1,224	5,000	612 00	2 00	24	76	290
291	43	300	20,760	100,000	459 53	1 53	20	80	291
292	44	300	41,000	150,000	940 90	3 13	27	73	292
293	5	280	2,800	7,000	560 00	2 00	7	93	293
294	124	290	87,446	201,545	705 21	2 43	43	57	294
295	30	305	19,379	34,949	645 97	2 12	57	43	295
296	39	303	20,760	141,019	532 31	1 75	15	85	296
297	135	300	84,084	240,000	604 10	2 01	35	65	297
298	104	311	57,661	127,000	554 53	1 78	45	55	298
299	95	300	49,000	350,000	515 79	1 72	14	86	299
300	5	305	2,000	10,000	400 00	1 31	20	80	300
301	800	300	500,000	2,000,000	625 00	2 06	25	75	301
302	109	365	81,802	502,368	756 90	2 07	16	84	302
303	43	340	34,600	74,000	804 65	2 36	46	54	303
304	67	305	60,000	172,000	895 52	2 93	35	65	304
305	112	283	74,645	138,984	657 54	2 32	54	46	305
306	53	250	22,961	181,575	433 22	1 73	13	87	306
307	9	300	5,720	12,000	635 55	2 12	47	53	307
308	22	308	11,760	36,500	534 54	1 73	32	68	308
309	75	275	38,240	125,000	509 87	1 40	30	70	309
310	52	305	38,600	60,000	742 30	2 43	65	35	310
311	49	300	36,822	140,000	753 51	2 51	26	74	311
312	638	300	355,275	970,000	556 86	1 85	37	63	312
313	44	303	22,840	70,000	519 90	1 71	33	67	313
314	5	313	2,860	6,000	572 00	1 82	44	65	314
315	50	290	37,750	69,800	755 00	2 60	63	47	315
	2,228	average 301	2,154,740	8,128,413	average 597 58	average 1 95	average 33	average 67	

STOVE MANUFACTURERS, HOT AIR FURNACES AND HEATING APPARATUS.—TABLE No. 10.

316	19	280	9,400	18,000	494 73	1 76	52	48	316
317	271	285	159,113	233,306	587 13	1 99	68	32	317
318	18	305	5,718	41,388	317 66	1 04	14	86	318
319	350	265	200,000	600,000	574 28	2 10	33	67	319
320	20	265	9,000	45,000	450 00	1 69	2	98	320
321	58	290	32,595	85,000	561 98	1 94	38	62	321
322	43	300	29,400	60,000	638 72	2 28	54	46	322
323	29	305	29,000	90,000	1,000 00	3 00	32	68	323
324	45	305	32,000	100,000	711 11	2 33	32	68	324
325	76	270	46,919	123,000	617 49	2 28	38	62	325
326	129	290	76,900	166,000	596 13	2 05	46	54	326
327	7	300	2,500	7,000	357 14	1 19	37	63	327
328	24	300	15,350	35,000	681 40	2 27	44	56	328
329	61	305	39,500	70,000	647 54	3 12	56	44	329

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

STOVE MANUFACTURERS, HOT AIR FURNACES AND HEATING APPARATUS.
TABLE No. 10.—*Continued.*

Schedule No	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
330	77	300	28,000	100,000	363 64	1 21	28	72	330
331	10	305	5,660	9,000	566 00	1 85	62	38	331
332	263	290	148,000	285,000	562 36	1 94	52	48	332
333	130	300	74,184	188,603	570 60	1 90	40	60	333
335	126	285	64,000	160,000	507 86	1 43	40	60	335
336	85	300	65,468	140,230	770 21	2 57	48	52	336
	2,021	Average 293	1,072,707	2,556,527	Average 578 80	Average 1 99	Average 41	Average 59	

ENGINE, BOILER AND MACHINERY FACTORIES, ENGINEERS' MACHINE SHOPS.—
TABLE No. 11.

337	353	300	240,472	600,000	681 25	2 27	40	60	337
338	81	300	29,000	100,000	358 20	1 19	29	71	338
339	3	270	920	2,100	306 66	1 13	43	57	339
340	27	305	18,022	45,926	667 48	2 12	40	60	340
341	9	310	8,400	7,000	933 33	3 01	..	..	341
342	72	280	28,600	125,000	397 22	1 41	22	78	342
343	11	300	4,900	19,000	445 45	1 48	26	74	343
344	10	312	6,212	24,000	261 20	1 99	25	75	344
346	33	308	18,022	56,359	546 12	1 80	32	68	346
347	29	305	15,100	25,000	520 69	1 70	60	40	347
348	23	300	12,100	43,000	526 80	1 75	20	80	348
349	14	300	5,578	20,686	398 42	1 32	27	73	349
350	85	300	42,000	150,000	494 12	1 64	28	72	350
351	14	305	15,480	51,909	1,105 71	3 62	30	70	351
352	148	305	115,742	260,000	782 40	2 56	44	56	352
353	44	305	25,918	150,000	566 32	1 85	16	84	353
354	11	305	9,530	15,000	866 91	2 84	63	37	354
355	12	292	9,460	23,500	788 33	3 70	41	59	355
356	6	305	5,000	6,300	833 33	2 73	83	17	356
357	194	305	122,321	350,000	630 52	2 07	35	65	357
358	21	310	14,700	45,000	700 00	2 25	32	68	358
359	95	300	65,000	190,000	684 21	2 28	34	66	359
360	457	300	257,000	845,000	562 16	1 87	30	70	360
361	6	313	7,338	25,000	1,223 00	3 00	29	71	361
362	16	300	6,423	19,231	401 42	1 33	34	66	362
363	8	306	4,500	20,000	562 50	1 57	22	78	363
364	72	305	56,726	166,348	787 86	2 58	34	66	364
365	53	300	31,950	67,000	602 86	2 01	48	52	365
366	17	300	10,000	11,000	588 23	1 96	90	10	366
368	24	300	12,367	21,348	515 29	1 71	58	42	368
369	5	312	2,750	5,000	550 00	1 76	55	45	369
370	59	300	32,736	71,209	554 84	1 85	46	54	370
371	65	300	45,000	100,000	692 30	2 30	45	55	371
372	13	300	7,913	17,738	608 69	2 02	46	54	372
373	58	312	32,800	90,000	582 75	1 86	36	64	373
374	28	305	16,750	62,969	598 93	1 96	27	73	374
375	6	200	4,000	3,500	666 66	3 33	12	88	375
377	8	305	6,320	23,804	790 00	2 59	27	73	377

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

ENGINE, BOILER AND MACHINERY FACTORIES.—ENGINEER'S MACHINE SHOP.
TABLE No. 11.—*Continued.*

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c	%	%	
378	22	305	15,581	51,909	708 22	2 32	31	69	378
380	16	312	7,500	18,000	468 75	1 50	41	59	380
381	2	290	916	4,500	458 00	1 57	23	77	381
383	23	305	19,550	40,000	850 00	2 78	48	52	383
384	10	320	7,264	9,728	726 40	2 33	80	20	384
385	35	306	16,096	31,589	459 88	1 50	52	48	385
386	146	300	103,500	420,000	608 90	2 02	24	76	386
387	9	310	3,760	28,000	417 77	1 34	13	87	387
389	9	300	5,552	5,605	616 77	2 05	91	9	389
391	6	288	4,305	9,000	717 50	2 39	48	52	391
395	38	300	19,800	45,000	521 50	1 73	44	56	395
396	42	305	41,000	116,000	952 38	3 12	35	65	396
397	17	300	7,500	18,000	441 17	1 47	42	58	397
399	39	300	20,440	47,806	524 10	1 75	43	57	399
	2,604	Average 312	1,619,814	4,703,864	Average 610 28	Average 2 08	Average 39	Average 61	

METALLIC ROOFING AND LIGHT IRONWARE.—TABLE No. 12.

400	1	300	400	20,000	400 00	1 33	5	95	400
401	16	305	5,600	20,000	350 00	1 11	28	72	401
402	53	300	34,200	70,000	645 26	2 15	49	51	402
403	42	305	21,642	100,000	515 23	1 68	21	79	403
404	26	306	15,729	44,000	604 96	1 97	36	64	404
405	161	313	67,000	148,000	418 10	1 30	45	55	405
407	341	300	200,800	644,510	588 85	1 96	31	69	407
409	14	309	11,133	32,615	795 21	2 57	35	65	409
410	40	306	24,751	120,000	618 77	2 02	21	79	410
411	5	305	2,500	5,000	500 00	1 64	55	45	411
412	19	300	12,000	70,000	631 58	2 10	17	83	412
413	70	300	30,000	130,000	428 57	1 43	23	77	413
415	7	305	4,300	25,000	614 28	2 01	17	83	415
416	34	300	16,500	44,000	485 29	1 61	37	63	416
417	75	300	46,850	103,011	624 66	2 08	45	55	417
418	4	300	2,000	10,000	500 00	1 66	20	80	418
419	53	300	18,500	60,000	349 51	1 16	31	69	419
420	15	305	9,740	65,747	629 33	2 06	15	85	420
421	48	305	38,955	125,000	811 56	2 66	31	69	421
422	402	280	184,774	834,000	459 63	1 63	22	78	422
423	5	300	3,700	12,000	740 00	2 46	31	69	423
424	123	306	66,200	482,108	538 21	1 43	14	86	424
	1,554	Average 302	821,730	3,064,991	Average 556 77	Average 1 82	Average 29	Average 71	

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

WIRE FENCE, WIRE ROPE AND WIRE CLOTH FACTORIES.—TABLE No. 13.

Schedule No	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
425	10	200	5,578	27,196	557 80	2 19	20	80	425
426	126	305	96,960	620,000	767 22	2 18	15	85	226
427	19	300	9,900	25,000	521 50	1 73	39	61	427
428	41	310	15,500	60,000	378 40	1 22	26	74	428
429	27	300	11,850	25,000	438 88	1 46	47	53	429
430	38	200	24,000	250,000	631 58	3 15	9	91	430
431	21	309	17,192	221,647	866 29	2 83	8	92	431
432	36	250	24,500	275,000	680 50	2 76	9	91	432
433	10	300	4,000	20,000	400 00	1 33	20	80	433
434	17	300	9,500	100,000	558 82	1 86	9	91	434
435	322	275	202,100	700,000	627 50	2 28	29	71	435
436	6	300	2,700	22,000	450 00	1 50	12	88	436
437	82	300	59,184	380,000	721 75	2 40	10	90	437
438	10	300	4,000	20,000	400 00	1 33	20	80	438
440	62	300	40,000	60,000	645 16	2 15	66	34	440
441	10	300	5,200	24,000	520 00	1 73	22	78	441
442	20	308	12,862	41,545	643 10	2 08	31	69	442
443	43	200	24,000	250,000	558 14	2 79	10	90	443
	900	Average 279	350,046	3,121,388	Average 575 93	Average 2 05	Average 22	Average 78	

BRASS AND COPPER WARE FACTORIES AND PLUMBERS' SUPPLIES.—TABLE No. 14.

445	49	305	25,469	61,400	519 77	1 70	41	59	445
446	33	250	17,604	103,600	533 45	2 13	17	83	446
447	33	275	26,822	92,125	813 36	2 95	29	71	447
448	67	300	37,982	113,000	566 59	1 88	33	67	448
449	8	306	4,950	8,000	618 75	2 02	61	39	449
450	64	304	27,214	82,060	425 22	1 31	33	67	450
451	9	300	3,000	24,000	333 33	1 11	12	88	451
452	205	313	101,319	231,639	494 27	1 57	43	67	452
453	12	305	6,448	20,000	537 33	1 76	32	68	453
454	110	305	60,735	350,000	552 13	1 81	18	82	454
455	107	300	75,198	148,899	702 78	2 34	50	50	455
456	13	305	9,860	27,116	750 77	2 36	36	64	456
457	15	308	13,238	157,816	882 53	2 73	8	92	457
458	116	300	60,500	207,500	521 55	1 73	28	72	458
459	33	305	21,123	37,126	640 90	2 10	57	43	459
460	270	300	139,939	568,272	518 29	1 72	24	76	460
461	200	305	125,000	500,000	625 00	2 06	25	25	461
462	21	300	10,200	24,038	485 76	1 61	42	58	462
463	15	308	13,238	157,816	882 53	2 87	9	91	463
	1,380	average 300	779,839	2,914,407	average 600 23	average 1 98	average 31	average 69	

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

SILVER-PLATED WARE AND JEWELLERY FACTORIES.—TABLE No. 15.

Schedule No	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
464	126	300	89,999	180,848	714 70	2 04	44	56	464
465	10	305	5,919	15,067	591 90	1 94	39	41	465
466	28	300	11,900	52,000	425 00	1 41	23	77	466
467	13	206	8,102	32,190	623 23	3 02	25	75	467
468	111	297	70,188	295,829	632 32	2 13	27	73	468
469	4	300	1,000	4,000	250 00	83	25	75	469
470	150	298	96,848	459,539	645 65	2 16	21	79	470
471	153	305	82,431	300,241	538 76	1 77	27	73	471
	595	average 289	366,387	1,339,714	average 552 69	average 1 91	average 29	average 71	

WOOLLEN, COTTON, LINENS AND YARNS MILLS.—TABLE No. 16.

472	258	278	63,700	357,199	246 90	95	18	82	472
473	5	300	1,500	5,000	300 00	1 00	30	70	473
474	40	300	12,000	100,000	300 00	1 00	12	88	474
475	2	200	752	1,545	342 50	1 71	50	50	475
476	54	300	19,500	100,000	361 11	1 20	20	80	476
477	6	300	1,500	10,914	250 00	83	15	85	477
478	16	286	2,710	28,000	169 37	59	10	90	478
480	29	300	10,000	85,000	344 82	1 15	12	88	480
481	51	200	8,000	12,000	156 86	78	66	34	481
482	42	300	16,800	80,000	400 00	1 33	21	79	482
483	25	200	3,600	4,300	144 00	72	90	10	483
484	1,036	305	400,595	1,822,000	386 67	1 27	22	78	434
485	314	292	131,303	760,000	418 16	1 49	17	83	485
486	9	280	5,000	150,000	555 55	1 98	3	97	486
487	38	300	17,500	70,000	460 52	1 53	25	75	487
488	8	305	4,174	24,000	521 75	1 71	18	82	488
489	108	300	48,900	110,000	452 80	1 51	44	66	489
491	8	150	2,550	7,500	318 75	2 12	34	66	491
492	2	300	1,600	2,500	800 00	2 66	64	36	492
493	29	245	6,900	7,500	237 94	97	92	8	493
494	26	300	11,180	50,000	430 00	1 43	22	78	494
495	180	305	98,911	409,832	549 50	1 47	24	76	495
496	279	300	99,500	375,000	350 66	1 17	26	74	496
500	13	300	4,000	20,000	307 69	1 02	20	80	500
501	1	300	375	5,000	375 00	1 25	7	93	501
502	34	300	9,400	36,000	276 47	92	26	74	502
503	22	300	5,000	25,000	227 27	76	20	80	503
504	23	300	8,900	48,000	386 95	1 25	18	82	504
505	5	300	2,000	20,000	400 00	1 33	10	90	505
506	31	240	5,000	10,000	161 29	68	50	50	506
507	35	220	10,200	9,200	291 33	1 32	11	89	507
	2,729	Average 274	1,014,050	4,745,490	Average 352 38	Average 1 26	Average 29	Average 71	

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

KNITTED GOODS FACTORIES AND WOMEN'S UNDERWEAR.—TABLE NO. 17.

Schedule No	Number of persons employed.	Number of days in operation	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
509	157	291	59,000	300,000	375 16	1 29	16	84	509
510	36	300	8,760	33,000	243 33	81	26	74	510
511	2,440	310	952,000	3,900,000	394 26	1 27	24	76	511
512	115	294	30,914	189,673	268 82	91	16	84	512
513	5	305	1,100	15,000	220 00	72	7	93	513
514	70	300	20,600	100,000	295 14	98	21	79	514
515	62	300	21,000	120,000	338 71	1 13	17	83	515
516	144	300	51,000	200,000	354 16	1 18	25	75	516
517	36	300	11,525	80,204	320 14	1 07	14	86	517
518	71	277	29,198	190,500	411 11	1 52	15	85	518
519	83	305	22,425	75,000	270 18	88	25	75	519
520	29	305	16,502	119,000	569 30	1 86	12	88	520
521	115	300	35,143	250,000	305 59	1 01	18	82	521
523	60	305	13,700	55,000	228 33	75	23	77	523
524	14	305	3,800	24,000	271 43	89	16	84	524
525	22	300	5,000	25,000	227 27	76	20	80	525
527	22	300	8,900	48,000	404 50	1 35	19	81	527
528	75	300	22,000	122,000	293 33	97	18	82	528
529	24	300	11,316	58,308	471 50	1 57	19	81	529
	3,580	Average 300	1,322,983	5,904,685	Average 358 05	Average 1 21	Average 18	Average 82	

CLOTHING FACTORIES, MEN'S AND WOMEN'S WHITEWEAR, MILLINERY.—TABLE NO. 18.

530	175	306	73,024	212,100	411 56	1 34	34	66	530
532	94	310	39,581	180,451	421 70	1 33	22	78	532
533	100	305	36,000	220,000	360 00	1 15	16	84	533
534	2	150	310	3,500	155 00	1 03	10	90	534
535	132	300	50,094	235,117	379 50	1 26	25	75	535
536	55	275	32,422	131,000	589 49	2 14	25	75	536
537	120	300	54,000	120,000	375 00	1 25	37	63	537
538	104	300	50,008	108,733	480 85	1 60	48	52	538
539	88	290	14,100	90,000	160 23	55	16	84	539
540	96	295	30,180	123,000	314 16	1 06	24	76	540
542	97	295	31,200	225,000	321 65	1 09	14	86	542
543	34	290	13,160	67,000	387 51	1 34	55	45	543
547	141	310	58,000	230,000	411 34	1 33	25	75	547
	1,238	Average 286	473,079	1,945,901	Average 336 77	Average 1 27	Average 27	Average 73	

BOOT AND SHOE MANUFACTURING, FELT FOOTWEAR.—TABLE NO. 19.

549	102	300	38,500	250,000	377 55	1 26	15	85	549
550	93	300	43,300	250,000	465 59	1 55	17	83	550
551	476	263	108,105	1,375,509	225 10	89	8	92	551
552	63	290	135,381	890,086	2,148 90	7 41	15	85	552
553	181	300	110,619	359,397	611 15	2 03	31	69	553
554	32	300	18,639	111,092	582 47	1 94	17	83	554
555	389	278	198,746	1,009,000	510 91	1 42	20	80	555
556	73	270	35,388	153,274	484 76	1 79	23	78	556

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

BOOT AND SHOE MANUFACTURING, FELT FOOTWEAR.—TABLE No. 19.—*Continued.*

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
557	52	300	23,700	96,000	455 77	1 52	25	75	557
558	17	300	11,750	50,000	691 17	2 30	23	77	558
559	103	300	38,500	400,000	373 78	1 24	10	90	559
560	50	300	24,694	90,000	493 88	1 64	27	73	560
561	30	285	14,200	60,000	473 33	1 66	24	76	561
562	64	300	32,400	165,000	506 25	1 68	19	81	562
563	30	300	14,300	85,000	461 29	1 62	17	83	563
564	47	300	12,700	100,000	270 21	1 90	12	88	564
565	2	305	1,200	5,000	600 00	1 96	24	76	565
566	31	285	15,300	60,000	493 55	1 73	25	75	566
568	79	300	25,064	105,500	317 26	1 06	24	76	568
569	104	300	56,088	168,000	539 30	1 80	33	67	569
570	159	305	55,000	300,000	346 22	1 13	18	82	570
572	149	300	85,788	370,000	575 76	1 92	23	77	572
573	11	250	4,800	36,000	436 36	1 74	13	87	573
	2,337	Average 293	1,104,162	6,488,858	Average 540 89	Average 1 88	Average 20	Average 80	

FUR MANUFACTURERS, DRESSERS AND DYERS, HAT AND CAP FACTORIES—TABLE No. 20.

574	65	300	32,740	118,780	503 69	1 67	29	71	574
575	112	300	64,600	355,000	576 78	1 32	18	82	575
576	25	305	6,500	70,000	260 00	85	9	91	576
577	2	300	700	8,000	350 00	1 18	7	93	577
578	110	300	44,860	175,000	407 81	1 35	25	75	578
	314	Average 301	149,400	726,780	Average 419 66	Average 1 27	Average 18	Average 82	

TANNERS, HARNESS AND LEATHER GOODS FACTORIES.—TABLE No. 21.

580	31	308	14,900	192,416	480 60	1 56	8	92	580
581	9	300	3,500	10,000	388 88	1 29	35	65	581
582	53	280	20,593	72,558	387 79	1 38	29	71	582
583	3	200	800	2,500	266 66	1 33	4	96	583
584	9	290	4,900	20,000	544 44	1 87	24	76	584
585	30	310	15,850	60,000	528 33	1 70	26	74	585
586	24	300	13,238	54,000	551 58	1 84	24	76	586
587	159	300	61,000	325,000	383 54	1 28	19	81	587
588	24	300	13,800	100,000	575 00	1 91	13	87	588
589	4	300	2,300	25,000	575 00	1 91	10	90	589
590	26	300	14,081	117,700	503 38	1 67	12	88	590
591	13	300	6,036	80,000	464 30	1 54	8	92	591
592	366	300	111,000	570,000	303 27	1 01	20	80	592
593	97	295	31,200	225,000	321 65	1 09	14	86	593
595	3	300	1,500	20,000	500 00	1 66	7	93	595
596	16	305	9,250	84,500	578 12	1 89	11	89	596
297	267	310	155,864	1,300,000	583 75	1 88	12	88	597
598	30	300	16,500	92,619	550 00	1 16	18	82	598

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

TANNERS, HARNESS AND LEATHER GOODS FACTORIES.—TABLE No. 21—*Continued.*

Schedule No	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c	$ c.	%	%	
599	90	300	52,050	616,540	578 33	1 59	8	92	599
600	20	275	5,980	45,000	299 00	1 81	13	87	600
601	371	305	155,000	1,250,000	417 79	1 37	12	88	601
602	35	310	15,023	125,698	429 23	1 38	12	88	602
603	5	290	1,992	10,000	398 40	1 37	11	89	603
604	65	305	23,000	100,000	353 85	1 16	23	77	604
	1,750	Average 295	749,357	5,498,531	Average 456 79	Average 1 53	Average 16	Average 84	

FLOUR AND FEED MILLS, CEREAL FOOD FACTORIES.—TABLE No. 22.

605	32	305	21,600	600,000	675 00	2 21	4	96	605
606	11	300	4,924	92,508	447 63	1 49	5	95	606
607	9	310	7,010	52,000	778 88	2 51	13	87	607
608	450	312	207,221	5,242,135	460 49	1 44	4	96	608
609	2	300	1,300	5,000	650 00	2 16	26	74	609
610	2	295	1,200	36,000	600 00	2 04	3	97	610
611	3	300	1,800	25,000	600 00	2 00	7	93	611
612	2	300	800	37,500	400 00	1 33	2	98	612
613	4	300	2,412	50,366	600 30	2 00	5	95	613
615	1	300	400	4,000	400 00	1 33	10	90	615
616	1	100	165	4,000	165 00	1 01	4	96	616
617	1	312	400	40,000	400 00	1 33	1	99	617
618	18	300	8,710	176,673	483 88	1 61	5	95	618
619	16	300	6,750	345,000	421 87	1 40	2	98	619
620	25	300	15,729	281,000	629 16	2 09	5	95	620
621	12	300	8,248	120,237	687 33	2 29	7	93	621
622	2	305	1,100	40,000	550 00	1 47	3	97	622
623	10	305	6,500	105,000	650 00	2 13	6	94	623
624	8	300	3,500	10,000	437 50	1 46	35	65	624
625	12	300	6,425	52,923	535 40	1 78	12	88	625
626	24	313	15,154	523,879	631 41	2 02	3	97	626
627	2	290	895	23,600	447 50	1 54	4	96	627
628	3	300	1,600	40,000	533 33	1 74	4	96	628
629	2	305	1,200	16,700	600 00	1 97	7	93	629
631	10	295	6,208	99,558	620 80	2 10	6	94	631
632	7	307	3,349	94,854	478 42	1 56	3	97	632
634	6	305	3,100	40,000	516 66	1 69	7	93	634
635	3	310	1,200	40,000	400 00	1 29	3	97	635
636	3	300	2,000	40,000	666 66	2 22	5	95	636
637	11	300	7,180	141,000	652 72	2 17	5	95	637
638	7	305	2,400	30,000	342 85	1 09	8	92	638
639	4	300	1,330	38,200	332 50	1 11	4	96	639
640	3	305	1,400	3,500	466 66	1 53	46	54	640
641	23	300	16,529	500,000	723 00	2 41	3	97	641
642	2	305	1,000	20,000	500 00	1 31	5	95	642
643	6	300	2,262	42,722	377 00	1 25	5	95	643
644	4	290	1,980	35,000	495 00	1 70	6	94	644
645	7	307	3,479	97,958	497 00	1 62	4	96	645
646	5	300	2,550	45,000	510 00	1 70	5	95	646
647	11	313	7,465	200,000	678 63	2 17	3	97	647
648	18	300	10,236	115,726	568 66	1 89	9	91	648
649	9	300	4,700	75,000	522 22	1 74	6	94	649
650	17	305	12,272	266,000	721 88	2 36	4	96	650

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued*

FLOUR AND FEED MILLS, CEREAL FOOD FACTORIES.—TABLE No. 22—*Continued.*

Schedule No	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
651	60	313	40,464	300,000	674 40	2 15	13	87	651
652	13	300	7,300	150,000	561 58	1 87	5	95	652
653	2	250	800	4,000	400 00	1 60	2	98	653
654	12	300	7,000	150,000	583 33	1 94	5	95	654
655	10	300	6,768	151,256	576 80	2 25	4	96	655
657	5	150	3,200	75,000	640 00	4 26	4	96	657
658	56	300	36,430	700,000	650 53	2 16	5	95	658
660	3	300	1,200	30,000	400 00	1 33	4	96	660
661	2	310	1,500	100,000	750 00	2 42	2	98	661
663	6	200	3,480	40,000	580 00	2 90	8	92	663
665	61	300	39,000	1,500,000	639 34	2 13	3	97	665
668	7	305	3,812	65,000	544 57	1 78	6	94	668
669	7	305	3,438	60,000	491 14	1 61	5	95	669
670	6	300	3,500	65,000	583 33	1 94	5	95	670
671	2	305	910	30,000	455 00	1 46	3	97	671
672	14	305	7,600	250,000	542 85	1 78	3	97	672
675	7	300	4,400	125,000	628,57	2 09	4	96	675
676	4	275	2,700	18,000	675 00	2 45	15	85	676
677	6	300	3,380	600,000	565 00	1 88	5	95	677
678	1	300	6,600	20,861	660 00	2 20	3	97	678
679	3	305	2,000	35,000	666 66	2 18	6	94	679
680	3	300	1,200	30,000	400 00	1 33	4	96	680
681	3	300	1,265	30,000	421 66	1 40	42	58	681
683	20	305	11,100	350,000	555 00	1 82	3	97	683
684	14	250	7,500	120,000	535 71	2 14	6	94	684
685	24	305	13,200	400,000	550 00	1 80	3	97	685
686	4	310	3,435	103,000	858 75	2 77	3	97	686
688	4	300	2,200	48,000	550 00	1 83	5	95	688
689	25	300	9,000	40,000	360 00	1 20	22	78	689
690	8	305	4,900	100,000	612 50	2 00	5	95	690
691	2	275	840	23,000	420 00	1 56	4	96	691
692	2	300	650	7,000	325 00	1 08	9	91	692
693	10	310	5,750	150,000	575 00	1 85	4	96	693
694	5	310	3,500	26,000	700 00	2 26	14	86	694
695	9	290	5,150	85,000	573 33	1 65	6	94	695
696	11	300	6,670	75,000	606 36	2 02	9	91	696
698	3	300	1,700	35,000	566 66	1 89	5	95	698
699	12	300	8,200	100,000	683 33	2 27	8	92	699
701	16	300	9,260	70,000	578 75	1 93	13	87	701
703	4	300	2,500	20,000	650,00	2 08	12	88	703
	1,274	Average 295	6,823,337	11,949,225	Average 519 89	Average 1 86	Average 7	Average 93	

BAKERS, BREAD AND BISCUIT AND CONFECTIONERS.—TABLE No. 23.

705	76	305	41,242	194,879	542 65	1 78	20	80	705
706	6	300	5,060	30,000	843 33	2 81	16	84	706
707	79	300	33,729	100,000	426 69	1 42	33	67	707
708	69	290	33,000	180,000	478 11	1 60	18	82	708
709	43	305	26,000	390,273	604 65	1 98	7	93	709
710	12	300	7,500	100,000	625 25	2 08	7	93	710
711	49	300	20,375	100,000	415 81	1 05	20	80	711
712	57	294	24,406	410,000	428 17	1 79	6	94	712
	391	Average 299	191,312	1,505,152	Average 545 58	Average 1 81	Average 16	Average 84	

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT. --*Continued.*

CANNING, PORK PACKING, BACON CURING, ABATTOIRS.—TABLE No. 24.

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
713	170	180	19,891	143,266	111 12	62	14	86	713
714	129	132	11,020	60,104	850 42	6 44	18	82	714
715	154	310	17,500	119,364	113 66	37	14	86	715
716	305	334	195,750	4,500,000	641 47	1 92	4	96	716
717	68	90	7,550	71,412	111 21	1 23	11	89	717
718	351	150	37,425	271,529	106 62	71	14	86	718
719	103	150	24,500	172,130	237 86	1 58	19	81	719
720	190	149	26,536	127,231	139 10	94	21	79	720
721	177	160	9,538	78,117	538 88	3 32	12	88	721
722	53	170	13,400	80,000	252 83	1 48	17	83	722
723	98	180	18,500	150,000	188 77	1 04	12	88	723
724	87	312	52,900	132,000	608 51	1 94	40	60	724
725	71	300	44,847	1,085,000	631 66	2 10	4	96	725
726	108	340	20,500	90,000	189 26	55	23	77	726
727	117	110	8,000	50,000	68 37	62	16	84	727
728	51	125	5,100	35,000	100 00	80	14	86	728
729	52	48	5,800	47,500	111 54	2 32	12	88	729
730	39	90	4,500	15,000	115 38	1 17	30	70	730
731	363	300	130,801	1,270,268	360 33	1 20	10	90	731
732	141	305	96,255	2,933,456	682 80	2 24	4	96	732
733	129	150	21,264	36,505	164 60	1 09	59	41	733
734	48	100	5,885	60,000	122 60	1 21	10	90	734
735	133	111	18,147	85,000	136 44	1 23	21	79	735
736	56	306	32,611	1,033,000	582 34	1 90	3	97	736
738	15	312	11,950	100,000	796 66	2 55	12	88	738
739	68	100	8,345	71,412	122 72	1 22	12	88	739
740	151	305	111,592	1,425,777	739 11	2 42	8	92	740
741	74	300	38,485	1,085,000	520 60	1 73	4	96	741
742	101	163	3,500	80,000	34 65	21	4	96	742
743	60	60	2,000	10,000	33 33	55	20	80	743
744	139	160	16,000	35,000	115 11	72	45	55	744
745	140	310	49,500	1,400,000	353 55	1 14	4	96	745
746	42	305	22,000	10,000	523 81	1 71	22	78	746
747	23	300	14,560	150,700	633 40	2 11	10	90	747
748	6	300	3,700	100,000	616 66	2 05	3	97	748
749	167	170	22,896	137,316	136 10	80	16	84	749
750	39	103	4,850	15,150	124 36	1 21	32	68	750
751	83	120	9,500	62,000	114 46	95	15	85	751
752	108	72	15,000	95,000	138 89	1 93	16	84	752
		average			average	average	average	average	
	4,109	197	1,162,098	17,423,232	302 03	1 52	16	86	

DAIRY PRODUCTS AND OTHER FOODS.—TABLE No. 25.

753	26	305	13,275	135,000	510 57	1 67	10	90	753
754	4	200	1,100	14,769	275 00	1 37	8	92	754
755	7	300	2,500	12,000	357 14	1 19	20	80	755
756	12	313	3,798	56,983	316 50	1 01	7	93	756
757	223	300	98,500	950,000	441 70	1 47	10	90	757
758	40	300	13,544	200,000	338 60	1 13	6	94	758
759	10	160	3,930	6,832	393 00	2 45	6	94	759
760	32	305	10,236	24,495	319 87	1 05	42	58	760
761	1	305	600	20,000	600 00	1 97	2	98	761

TABLE SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

DAIRY PRODUCTS AND OTHER FOODS.—TABLE NO. 25.—Continued.

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
762	28	305	16,500	75,000	589 28	1 93	22	78	762
763	31	295	12,000	118,000	387 90	1 35	10	90	763
764	167	315	140,294	368,671	840 08	2 64	38	62	764
765	6	305	1,500	3,000	250 00	82	50	50	765
766	13	305	6,100	19,500	469 23	1 53	32	68	766
767	48	310	31,500	250,000	654 58	2 11	13	87	767
768	57	125	6,800	80,000	119 30	95	8	92	768
769	9	313	2,808	67,000	312 00	99	4	96	769
770	7	278	5,300	40,000	757 14	2 72	13	87	770
771	166	305	93,197	1,092,638	567 45	1 86	9	91	771
772	26	300	5,000	40,000	192 30	64	12	88	772
773	3	300	900	20,000	300 00	1 00	4	96	773
774	4	305	1,650	54,190	412 50	1 35	3	97	774
775	85	306	38,276	324,215	450 30	1 47	12	88	775
776	10	300	5,097	34,060	509 70	1 69	15	85	776
		Average			Average	Average	Average	Average	
	1,015	285	514,405	4,006,353	431 84	1 52	15	85	

BREWERIES, DISTILLERIES AND WINE FACTORIES, CIGAR AND TOBACCO FACTORIES.—TABLE NO. 26.

777	240	273	103,243	1,362,197	430 18	1 60	8	92	777
778	102	300	31,100	90,000	304 90	1 01	34	66	778
779	14	306	12,605	50,000	900 35	2 22	25	75	779
780	3	300	2,748	11,000	916 00	3 05	25	75	780
781	129	300	49,451	70,617	383 35	1 27	70	30	781
782	6	310	4,800	44,000	800 00	2 58	11	89	782
783	184	300	72,524	350,000	394 15	1 31	21	79	783
784	7	313	5,164	25,000	737 71	2 36	20	80	784
785	5	300	2,000	5,000	400 00	1 33	40	60	785
786	15	312	9,828	75,000	655 20	2 10	10	90	786
787	50	325	26,355	77,400	527 10	1 62	34	66	787
788	222	312	147,531	596,000	664 60	2 13	3	97	788
789	7	130	1,300	5,000	185 71	1 43	26	74	789
790	9	300	3,200	15,000	355 55	1 18	21	79	790
791	249	306	145,432	750,000	584 61	1 91	19	81	791
792	11	313	8,055	27,000	732 27	2 34	30	70	792
793	19	300	14,308	137,000	753 50	2 51	10	90	793
794	33	313	24,841	216,069	725 76	2 41	11	89	794
795	6	313	3,742	22,328	623 66	1 99	17	83	795
796	10	365	6,500	30,000	650 00	1 78	22	78	796
797	22	311	12,501	52,293	568 23	1 82	24	76	797
798	12	313	6,950	60,000	579 16	1 85	12	88	798
799	9	313	7,500	27,000	833 33	2 63	28	72	799
800	1	313	520	6,000	520 00	1 66	9	91	800
801	11	310	8,115	26,880	737 72	2 38	31	69	801
802	11	313	7,203	30,724	654 82	2 09	24	76	802
803	29	300	30,000	100,000	1,031 30	3 43	30	70	803
804	1	200	300	1,000	300 00	1 50	30	70	804
805	38	365	25,720	90,000	676 84	1 86	29	71	805
806	38	311	23,687	145,530	623 34	2 00	16	84	806
809	500	300	372,992	926 897	745 98	2 48	40	60	809
810	53	312	44,465	180,000	838 58	2 69	25	75	810
		Average			Average	Average	Average	Average	
	2,046	301	1,214,670	5,604,935	619 81	2 02	24	76	

TABLES SHOWING WAGES AND SALARIES AND SHARE OF PRODUCT.—*Continued.*

CHEMICAL WORKS, MEDICINE AND PERFUMES.—TABLE No. 27.

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
811	42	300	17,063	100,000	406 26	1 35	17	83	811
812	225	365	174,000	600,000	784 00	2 15	29	71	812
813	2	200	1,500	11,000	750 00	3 25	14	86	813
814	145	300	53,013	399,845	365 61	1 22	13	87	814
816	8	300	10,700	50,000	1,336 50	4 45	21	79	816
817	9	305	6,734	65,073	748 22	2 45	10	90	817
818	9	275	7,400	36,851	822 22	3 35	21	79	818
819	157	300	68,500	180,000	436 30	1 45	38	62	819
820	4	310	2,420	25,000	605 00	1 95	10	90	820
822	42	300	49,000	150,000	1,166 66	3 89	32	68	822
823	67	300	70,000	240,000	1,044 77	3 48	29	71	823
824	140	305	193,193	503,911	1,379 95	4 52	39	61	824
	850	Average 297	653,523	2,361,680	Average 820 45	Average 2 97	Average 23	Average 77	

OIL, REFINERIES, PAINTS AND VARNISH FACTORIES.—TABLE No. 28.

825	6	306	2,950	18,000	491 66	1 61	16	84	825
826	19	305	17,026	215,097	896 10	2 93	8	92	826
828	9	305	6,448	47,000	716 44	2 31	13	87	828
829	10	313	7,162	72,223	716 20	2 29	10	90	829
830	4	300	2,300	20,000	575 00	1 91	12	88	830
831	10	300	3,684	20,000	368 40	1 23	18	82	831
832	65	270	28,717	244,500	441 80	1 63	12	88	832
833	9	300	6,785	52,000	753 55	2 18	13	87	833
834	33	310	33,325	202,000	1,009 76	3 91	12	88	834
835	67	258	33,803	154,638	504 37	1 57	22	78	835
836	19	300	14,400	350 000	757 89	2 52	4	96	836
837	3	300	1,492	29,834	497 33	1 66	5	95	837
838	54	310	47,500	426,000	879 63	2 67	11	89	838
	308	Average 298	205,592	1,851,292	Average 662 16	Average 2 18	Average 12	Average 88	

GAS WORKS, ELECTRIC LIGHT, HEATING AND POWER WORKS.—TABLE No. 29.

839	9	365	9,886	135,602	1,098 44	3 01	7	93	839
840	59	365	36,863	139,312	624 79	1 71	27	73	840
841	23	365	14,860	173,000	641 74	1 76	9	91	841
843	4	365	2,700	7,500	675 00	1 85	38	62	843
844	2	365	1,241	4,973	602 50	1 65	31	69	844
846	4	365	1,950	5,400	487 50	1 33	39	61	846
847	3	365	1,020	5,000	340 00	93	20	80	847
848	3	365	1,050	5,998	350 00	96	21	79	848
849	12	365	7,490	20,000	624 16	1 71	37	63	849
850	18	365	17,340	73,000	907 77	2 48	24	76	850
851	177	365	109,440	538,799	618 30	1 69	19	81	851
852	111	365	91,286	241,173	822 39	2 25	38	62	852
853	3	365	2,600	13,965	866 66	2 37	20	80	853

TABLES SHOWING WAGES AND SALARIES AND SHARE PRODUCT.—*Continued.*

GAS WORKS, ELECTRIC LIGHT, HEATING AND POWER WORKS.—TABLE No. 29.—*Continued.*

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
854	27	365	20,620	95,000	763 70	2 09	21	79	854
855	6	365	3,912	18,874	652 00	1 78	22	78	855
856	10	365	7,081	40,005	708 10	1 91	17	83	856
858	7	365	3,000	35,000	428 57	1 17	9	91	858
859	66	365	19,580	12,000	296 66	81	16	84	859
861	1,489	365	762,243	2,464,368	511 92	1 40	31	69	861
	2,033	Average 365	1,114,162	4,028,969	Average 632 64	Average 1 73	Average 23	Average 77	

PRINTING AND ALLIED TRADES.—TABLE No. 30.

862	14	300	6,141	21,507	438 64	1 46	29	71	862
863	7	305	1,718	3,200	245 42	80	57	43	863
864	27	312	4,958	6,885	183 63	59	82	18	864
865	3	310	984	1,023	328 00	1 05	98	2	865
866	40	307	31,000	60,000	775 00	2 52	51	49	866
867	40	300	28,600	65,000	715 00	2 38	44	66	867
868	6	310	3,605	3,925	600 82	1 93	91	9	868
869	7	313	5,000	6,000	914 28	2 92	83	17	869
870	40	305	23,000	57,000	575 00	1 88	40	60	870
871	116	300	62,863	222,579	541 92	1 80	29	71	871
872	46	305	34,264	120,000	744 87	2 11	28	72	872
873	28	306	21,766	51,070	777 35	2 51	43	57	873
874	153	305	124,000	234,000	810 45	2 65	53	47	874
875	5	312	2,200	4,300	440 00	1 09	55	45	875
876	181	306	98,000	275,000	541 43	1 77	36	64	876
877	28	305	16,235	31,065	580 53	1 57	52	48	877
878	156	305	48,592	82,335	311 42	1 02	59	41	878
879	73	300	32,200	110,000	441 90	1 47	29	71	879
881	94	300	71,050	106,000	755 90	2 52	67	33	881
882	4	300	1,776	3,150	444 00	1 48	59	41	882
883	21	305	15,693	40,000	747 28	2 45	39	61	883
	1,089	Average 305	633,645	1,404,039	Average 567 28	Average 1 99	Average 59	Average 41	

BRICK, TILE AND PORTLAND CEMENT WORKS.—TABLE No 31.

884	154	240	47,700	300,000	309 74	1 29	16	84	884
885	48	250	35,389	100,000	737 27	2 95	35	65	885
886	18	297	13,277	56,632	737 61	2 48	24	76	886
887	3	243	1,532	4,000	510 66	2 10	38	62	887
888	21	150	7,500	11,375	357 14	2 38	88	12	888
890	16	305	11,329	24,242	708 60	2 32	47	53	890
891	19	305	11,000	10,000	578 94	1 90	.....	.....	891
892	22	130	8,700	25,000	395 45	3 04	35	65	892
893	46	160	17,041	52,000	370 45	2 31	33	67	893
894	7	310	5,271	17,801	753 00	2 43	31	69	894
895	67	220	12,829	20,000	191 49	87	64	36	895
896	168	300	134,720	233,821	801 90	2 67	57	43	896
897	30	182	9,000	17,028	300 00	1 65	53	47	897
898	15	304	8,544	15,000	568 86	1 87	56	44	898

TABLES SHOWING WAGES AND SALARIES AND SHARE PRODUCT.—*Concluded.*

BRICK, TILE, ETC.—TABLE NO. 31—*Continued.*

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages and salaries.	Gross value of product.	Employees' average annual earnings.	Employees' daily rate of pay.	Per cent. wages of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.	Schedule No.
			$	$	$ c.	$ c.	%	%	
900	8	305	5,000	12,000	625 00	2 05	41	69	900
901	65	250	39,000	148,500	600 00	1 96	26	74	901
902	2,466	365	1,968,881	7,128,214	798 33	2 18	28	72	902
903	42	305	12,725	58,415	302 98	99	22	78	903
904	69	200	8,617	12,256	124 88	62	71	29	904
905	210	313	140,001	204,448	666 67	2 13	68	32	905
907	15	305	9,500	3,000	633 33	2 07	31	69	907
908	10	300	5,700	18,000	590 00	1 90	32	68	908
909	6	90	1,000	2,500	166 66	1 85	40	60	909
910	28	300	20,000	50,000	714 28	2 38	40	60	910
911	33	250	17,159	250,000	519 97	2 08	7	93	911
914	296	322	58,790	204,975	198 27	62	21	79	914
915	79	206	39,348	131,442	498 71	2 37	30	70	915
	3,721	Average 256	2,650,553	9,110,649	Average 509 04	Average 1 98	Average 38	Average 62	

MISCELLANEOUS INDUSTRIES—TABLE NO. 32.

916	9	306	5,490	25,000	610 00	1 99	22	78	916
917	29	300	8,484	41,196	292 55	97	21	79	917
918	26	365	11,587	100,000	445 61	1 22	12	88	918
919	41	313	21,370	119,613	521 22	1 66	18	82	919
920	60	310	34,000	150,000	566 66	1 82	23	77	920
921	29	305	29,760	250,000	1,026 20	3 36	12	88	921
	194	Average 316	110,691	685,809	Average 577 04	Average 1 83	Average 16	Average 86	

SUMMARY OF 32 TABLES.

61,637	Average 290	37,806,066	156,712,991	Average 532 70	Average 1 81	Average 25.26	Average 74.74

INCREASE OR DECREASE OF PRODUCT AND OF WAGES.

The following figures, calculated from the preceding tables, show the average increase or decrease in value of product reported by each classified industry, and the number of establishments reporting unspecified increases or decreases, or no change from the previous year. Succeeding columns show the average increases in wages as stated in the schedules and the number of establishments reporting unspecified increases or decreases or no change. The concluding column gives the number of persons in the establishments benefiting by the increase in wages.

INCREASE OR DECREASE OF PRODUCT AND OF WAGES.

No.	Industries.	Product.					Wages.					
		Average increase.	Average decrease.	Increase not specified.	Decrease not specified.	Same amount.	Average increase.	Average decrease.	Increase not specified.	Decrease not specified.	Same rate of wages.	Number benefited.
		%	%	No.	No.	No.	%	%	No.	No.	No.	No.
1	Lumber, Saw Mills	12.3	.....	2	3	19	13.7	.....	1	....	3	5,257
2	Planing Mills, etc	10.0	.....	3	....	9	14.9	.....	2	3	10	1,252
3	Woodenware specialties	17.5	.....	2	....	12	14.4	.....	3	....	4	1,418
4	Furniture, etc.	17.6	.....	4	1	2	8.6	.....	7	....	5	3,954
5	Carriages, etc.	24.0	.....	2	....	7	8.7	.....	3	....	9	3,013
6	Agricultural Implements	26.1	.....	3	1	10	9.3	.....	2	....	5	1,296
7	Pianos, Organs, etc	14.3	.....	1	....	....	9.1	.....	....	....	....	251
8	Wood Pulp and Paper	22.6	.....	2	....	3	9.3	.....	5	....	2	1,420
9	Foundries, Rolling Mills, etc	16.3	.....	....	....	6	10.6	.....	3	....	6	1,472
10	Stove Factories	27.1	.....	....	....	4	8.6	.....	2	....	5	1,579
11	Machinery, etc.	10.1	.....	2	....	13	10.5	.....	3	....	8	900
12	Metallic Roofing, etc.	18.8	.....	1	....	5	11.3	.....	2	....	5	812
13	Wire Goods	14.3	.....	1	....	4	9.2	.....	4	....	4	322
14	Brassware	22.4	.....	3	....	2	9.0	.....	4	....	5	807
15	Silverware	3.5	.....	1	....	....	11.0	.....	3	....	....	300
16	Woollens, Cottons, etc	10.6	.....	3	....	7	10.9	.....	6	....	6	2,228
17	Knitted Goods	19.7	.....	1	1	1	13.1	.....	4	....	2	845
18	Clothing, etc	11.5	.....	5	....	....	7.0	.....	3	....	3	864
19	Boots and Shoes	21.7	.....	1	....	4	9.0	.....	3	....	4	1,671
20	Furs, Hats and Caps	18.3	.....	1	....	....	8.0	.....	....	....	1	221
21	Tanneries, Leather Goods	16.7	.....	1	....	7	10.8	.....	2	....	3	924
22	Flour Mills, etc	6.6	.....	13	....	31	10.7	.....	11	....	27	804
23	Bakeries, etc	13.5	.....	....	....	....	10.3	.....	1	....	1	206
24	Canning, Pork Packing, etc.	20.8	.....	2	1	3	11.3	.....	3	....	5	3,385
25	Dairy Products, etc	8.7	.....	2	1	5	9.2	.....	2	....	4	520
26	Distillers, Brewers, Cigars, etc.	18.5	.....	....	....	5	11.9	.....	2	....	7	881
27	Chemical Works, etc.	16.6	.....	....	....	3	11.2	.....	1	....	1	647
28	Oils, Paints, etc.	15.7	.....	....	....	1	8.1	.....	2	....	1	131
29	Gas, Electric Works, etc	8.1	.....	2	....	2	7.0	.....	1	....	7	1,745
30	Printing, etc	16.4	.....	1	....	2	11.4	.....	2	....	2	790
31	Bricks, Cement, etc	13.9	.....	1	....	7	9.7	.....	3	....	14	3,983
32	Miscellaneous	14.3	.....	....	....	....	11.4	.....	....	....	....	189
	Totals and averages	aver. 15.89	aver	50	8	174	20.9	aver.	90	aver	159	43,787

CHANGES OF WAGES AND HOURS

Barbers, at London, had their working hours reduced by 3½ per week, by legislation.

Barbers (850), at Toronto, received a reduction of 8 hours per week, by legislation.

Boilermakers (60), at Toronto, received a reduction of working hours from 10 to 9 per day from July 1.

Boilermakers, to the number of 60, at Toronto, received an increase of 2½c. per hour from August 1.

Bookbinders, Cutters and Rulers (38), at Ottawa, received increases.

Bookbinders, at Peterborough, received an increase of $1 per week from February 1.

Bricklayers and masons (25), at Orillia, received an increase of 5c. per hour from March 15.

Bricklayers and masons (100), at Windsor, received an increase of 7½c. per hour and a reduction in hours of 9 to 8, from April 1.

Bricklayers and Masons, at Niagara Falls, received an increase of 7½c. per hour from May 1.

Bricklayers (34), at St. Thomas, received an increase of 8c. per hour from May 1.

Bricklayers, at Toronto, received an increase of 2½c. per hour from May 1.

Bricklayers, stonemasons and plasterers (85), at Berlin, received an increase of 3c. per hour from May 1.

Building Trades' members, at St. Catharines, had working hours reduced by 1 hour per day.

Carpenters (225), at Niagara Falls, received an increase of 5c. per hour from May 1, with a reduction of working hours, to take effect during June, July, and August.

Carpenters, to the number of 80, at Berlin, received an increase from 30c. and 35c. to 40c. per hour from May 1.

Carpenters (200), at Windsor, received an increase and reduction in hours from May 1.

Carpenters (100), at Brantford, received an increase of 5c. per hour, and a reduction in hours of 5 per week, on June 23.

Civic employees, at Niagara Falls, received increases.

Civic employees, at London, received increases.

Civic labourers (1,000—1,200), at Hamilton, received increases from March 1.

Cutters and trimmers (200), at Hamilton, received an increase of $1 per day from March 24.

Departmental store employees (6,500), at Toronto, received a reduction in working hours from 51 to 47 per week, the change to continue through the summer months.

Electric workers, at Hamilton, received increases from April 10.

Electric workers, to the number 20, at Hamilton, received an increase of 2½c. per hour from May 1.

Electric workers (25), at Hamilton, received an increase of 5c. and 3c. per hour from May 8.

Electric workers (1,800), at Peterborough, received an increase of 10 per cent.

Engineers in the employ of the Toronto, Hamilton, and Buffalo Railway received increases.

Employees on the Niagara, St. Catharines and Toronto Railway, received increases from July 4.

Firemen, at Berlin, received increases.

Firemen (35), at Hamilton, received an increase of 5 per cent. on March 1.

Firemen (40), at London, received increases from March 3.

Flour mill workers, at Peterborough, received an increase of $1 and $1.50 per week from May 14.

Garment workers, at Toronto, received an increase.

Horseshoers (25), at Hamilton, received an increase from May 26.

Iron moulders, to the number of 7, at Belleville, received an increase of 40c. per day from May 1.

Iron moulders (12), at Peterborough, received an increase of 7 per cent. from May 5.

Labourers (200), at Hamilton, received an increase of 5c. per hour from May 1.

Labourers, at Owen Sound, received increases.

Motormen and conductors (260), at Hamilton, received an increase of 2c. per hour from December 1.

Motormen and conductors (85), at Port Arthur, received an increase of 2c. and 3c. per hour from March 1.

Motormen and conductors (21), at St. Thomas, received an increase from April 1.

Motormen and conductors (60), at Windsor, received increases from May 1.

Moulders, at Brockville, received increases.

Moulders and coremakers (90), at Guelph, received an increase of $1.50 per week from July 1.

Moulders and coremakers (200), at Hamilton, received increases from April 1.

Moulders, pattern makers, and blacksmiths, at Ottawa, received a reduction in working hours from January 1.

Moulders (17), at Owen Sound, received an increase of 30c. per day.

Painters (100), at Hamilton, received increases.

Painters (120), at Hamilton, received an increase of 2½c. per hour from May 1.

Paper makers (75), at Ottawa, received increases of 25c. and 30c. per day from May 7.

Plasterers (65), at Ottawa, received an increase in wages and a reduction in working hours.

Plumbers and gas fitters (12), at Berlin, received an increase of 5c. per hour from May 1.

Plumbers and gas fitters (8), at Hamilton, received an increase of 2½c. per hour from May 1.

Plumbers, at Ottawa, received increases and a reduction in hours from January 1.

Police-constables, at Berlin, received increases.

Police-constables (6), at St. Thomas, received an increase of $1.25 per week from April 1.

Police-constables, at Welland, received an increase of $1 per week from January 1.

Printers (job), at Hamilton, to the number of 65, received an increase on January 1.

Printers, at London, received an increase of $1 per week from July 1.

Printers employed at the Government Printing Bureau, at Ottawa, received an increase; the change affecting about 400 stereographers, compositors, bookbinders and pressmen.

Printers, at Peterborough, received an increase of $1 per week from January 1.

Printers and machine men (20), at Sault Ste. Marie, received a reduction in working hours of 6 per week from June 30.

Railway telegraphers (25), on the T. H. and B. Railway, received an increase of 10 per cent. and a reduction in hours on January 1.

Sheet metal workers (50), at Hamilton, received an increase of 2½c. per hour from May 1.

Shoe workers, at Toronto, received an increase of 10 per cent. from May 15.

Stokers (15), at St. Thomas, received an increase of $1 per week from April 1.

Stage employees, at Hamilton, were granted an increase of wages on September 15.

Stonemasons (500), at Toronto, received an increase of 2½c. per hour from May 1.

Street railway employees, at Port Arthur, received increases.

Tailors, at Brockville, received an increase of 15 per cent. on piece work prices.

Teamsters (14), at Belleville, received an increase of 50c. per day from April 14.

Teamsters, at Hamilton, received an increase of $1 per week.

Teamsters (400), at Toronto, received increases.

Theatrical employees, at Hamilton, numbering between 10 and 20, received an increase averaging 25 per cent., on September 15.

AMERICAN FEDERATION OF LABOUR.

Mr. Frank Morrison, Secretary of the American Federation of Labour, in his thirty-third report, presented at the annual convention of that body held at Seattle, Wash., gives statistics for the past year. These figures are of interest to wage earners and others of Ontario, as showing the movements, changes of wages, hours of labour, benefits distributed, etc., by the International Trades and Labour Unions of the United States and Canada.

Mr. Morrison says:—

Charters.—Reports from the Secretaries of 98 of our National and International Organizations furnish us with the information that 2,682 charters have been issued during the past year, and 1,318 surrendered—1,185 of the charters surrendered were locals of the National and International Unions, and 163 affiliated direct with the American Federation of Labour.

Gain in Membership.—The gain in membership reported by the Secretaries of 66 International organizations over the membership on the first of September last year is 295,695.

Strikes.—Reports from 68 National and International organizations and from local unions directly affiliated with the American Federation of Labour show that there were 969 strikes, in which there were 294,236 involved. Of that number 186,644 were benefited. The total cost of the strikes reported on was $3,345,721.43. Adding to that amount $118,494.48, donations made by local unions to other unions, we have a grand total of $3,464,215.91 expended to sustain members on strike during the past year.

The following tables are from Mr. Morrison's report:—

CHARTERS, GAIN IN MEMBERSHIP, AND STRIKES.

Organizations.	Charters issued.	Charters surrendered.	Gain in membership.	Strikes won.	Strikes compromised.	Strikes pending.	Strikes lost.	Number involved.	Number benefited.	Gain in wages.	Reduction in hours per day.	Cost of strikes.	Donations to other unions.
												$ c.	$ c.
A. F. of L. locals	256	163	1,014	....	....	....	....	.....	.....	.....	.....	20,119 22	4,954 88
Asbestos Workers	7	.....	400	7	2	2	....	600	600	20c. per day	2 hours	.....	.....
Bakers	33	12	3,855	9	....	3	....	196	165	10%	1 and 2 hrs	4,791 00	1,675 35
Barbers	43	19	2,928	7	....	....	....	1,815	1,815	.....	.....	2,096 40	5,451 00
Blacksmiths	23	3	1,500	2	....	1	....	4,000	1,200	.....	.....	30,000 00	.....
Boilermakers	51	44	1,214	1	3	79	2	3,140	.....	.....	.....	57,841 97	.....
Bookbinders	.....	.....	553	....	....	....	....	.....	.....	.....	.....	8,423 00	.....
Boot and Shoe Workers	17	14	.....	12	....	1	1	890	.....	.....	.....	18,461 34	12,000 00
Brewery Workmen	9	6	4,609	19	4	7	2	569	516	.....	.....	2,886 00	1,475 00
Brick, Tile & Terra Cotta Workers	23	8	.....	12	1	3	1	.....	.....	.....	.....	.....	.....
Bridge & Structural Iron Workers	10	4	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Broommakers	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Brushmakers	.....	.....	20	2	....	....	....	23	23	$1 per day	2 per week	200 00	300 00
Carpenters, Brotherhood	191	134	23,000	8	13	7	2	5,328	.....	5c per hour	.....	56,649 00	.....
Carriage and Wagon Workers	13	6	300	4	....	....	....	1,500	800	50c per day	4 per wk *a*	2,000 00	.....
Carvers, Wood	.....	.....	107	2	....	....	1	137	150	$2 to $5 pr wk	*b*	298 66	.....
Cement Workers	25	23	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Cigarmakers	5	8	.....	27	2	16	3	3,930	2,845	.....	.....	1,298 43	.....
Clerks, Retail	.....	.....	8,000	....	....	1	....	.....	.....	.....	.....	.....	.....
Cloth Hat and Cap Makers	3	.....	875	26	....	4	5	475	475	.....	6 hrs per wk	6,000 00	5,890 00
Commercial Telegraphers	4	.....	.....	....	1	....	....	225	225	.....	.....	2,000 00	.....
Compressed Air Workers	3	1	386	....	....	....	....	.....	.....	.....	.....	.....	225 00
Coopers	4	3	.....	7	7	3	4	651	550	.....	.....	8,754 41	.....
Cutting Die and Cutter Makers	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Diamond Workers	.....	.....	20	....	....	....	....	.....	.....	.....	.....	.....	175 00
Electrical Workers	55	10	7,452	18	6	2	2	3,350	3,100	40c per day	.....	.....	.....
Elevator Constructors	11	.....	200	....	1	1	....	30	.....	.....	.....	1,000 00	.....
Engineers, Steam	28	8	3,000	5	....	9	4	102	19	.....	.....	5,002 00	.....
Firemen, Stationary	26	3	1,008	8	2	1	....	204	204	10%	4 hrs per wk	7,426 00	3,000 00
Foundry Employees	8	6	100	1	....	....	....	140	140	15c per day	.....	210 00	55 00
Freight Handlers, Railroad	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Fur Workers	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....

Garment Workers, United	53	23	9,484	5	....	....	....	125,000	115,000	$1 to $10 pr wk	1 to 5 hrs p dy	144,524 50	8,000 00
Garment Workers, Ladies	10	3	20,000	6	2	2	....	40,000	.....	.....	.....	300,000 00	.....
Glass Bottle Blowers	10	3	.....	2	....	....	....	300	1,000	.....	.....	18,760 00	400 00
Glass Workers, Amal	8	8	.....	2	....	1	....	100	150	25c per day *c*	1 hr per day *d*	300 00	200 00
Glass Workers, Flint	19	.....	1,024	6	....	2	....	1,300	1,300	.....	.....	57,390 86	.....
Glove Workers	2	.....	69	3	....	1	2	450	300	.....	.....	.....	.....
Granite Cutters	16	7 *e*	.....	38	....	....	....	2,125	2,125	25c per day *f*	.....	36,943 25	6,125 00
Grinders, Pocket Knife Blade	.....	1	.....	....	....	....	....	.....	.....	.....	.....	.....	22 50
Hatters	.....	.....	.....	....	....	2	....	100	.....	.....	.....	18,000 00	6,300 00
Hodcarriers	71	33	12,000	21	2	1	....	3,500	5,000	5c per hour	.....	3,000 00	.....
Horseshoers	14	11	400	3	....	....	....	400	400	25 to 75c pr day	.....	2,000 00	.....
Hotel & Restaurant Employees	100	55	7,518	31	5	3	4	429	1,075	.....	.....	14,571 03	16,234 20
Iron and Steel Workers	8	2	500	....	1	1	....	1,500	.....	.....	.....	8,000 00	405 00
Lace Operatives	1	.....	60	4	1	....	....	350	.....	.....	.....	1,765 00	350 00
Lathers	6 *g*	18	1,200	....	....	....	....	.....	.....	.....	.....	.....	897 00
Laundry Workers	12	13	200	....	....	....	2	600	.....	.....	.....	.....	.....
Leather Workers on Horse Goods	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Leather Workers, Amal	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Lithographers	3	.....	147	....	....	....	....	.....	.....	.....	.....	.....	.....
Lithographic Press Feeders	2	.....	.....	....	....	....	....	.....	.....	8 to 10 per ct	.....	.....	.....
Longshoremen	43	31	.....	7	....	....	....	4,200	4,200	4% per day	.....	.....	1,500 00
Machine Printers & Color Mixers	.....	.....	.....	29	....	3	3	466	430	33⅓c per day *n*	.....	5,025 00	.....
Machinists	115	23	15,000	43	7	46	....	17,000	8,000	10%	1 hr *v*	245,405 00	.....
Maintenance of Way Employees	48	13	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Marble Workers	5	7	700	3	....	1	....	50	50	40c per day	.....	15,000 00	8,000 00
Meat Cutters and Butcher Workmen	25	11	1,901	9	....	3	....	800	1,200	$2 to $4 pr wk	1 to 3	1,145 00	300 00
Metal Polishers	23	26	1,500	15	6	4	5	700	700	25c per day *n*	½ hour *o*	19,000 00	2,000 00
Metal Workers, Sheet	49	20	1,500	15	1	4	3	1,100	2,000	25c per day	.....	15,000 00	.....
Mine Workers, United	287	114	112,336	....	....	....	....	.....	.....	.....	.....	1,200,796 93	.....
Miners, Western Federation of	28	14	.....	6	3	2	2	26,781	9,550	25 to 50c pr dy	*t*	150,188 34	17,270 30
Moulders	10	17	.....	....	....	....	....	.....	.....	.....	.....	495,722 48	.....
Musicians	52	22	3,000	....	....	....	....	.....	.....	.....	.....	.....	5,000 00
Painters	141	88	6,789	....	....	....	....	.....	.....	.....	.....	.....	.....
Papermakers	14	4	1,200	2	1	4	1	650	200	20c per day *h*	4 hrs *i*	8,000 00	1,100 00
Patternmakers	3	.....	952	12 *k*	....	7 *m*	1 *l*	296	156	.....	1 hr	13,050 59	.....
Pavers and Rammermen	4	.....	100	....	....	....	....	.....	.....	.....	.....	.....	.....
Paving Cutters	15	6	410	6	....	3	....	600	300	60c per day	1 hr	9,313 00	.....
Photo-Engravers	4	2	292	2	....	....	....	240	35	.....	.....	24,153 36	.....
Piano and Organ Workers	3	2	.....	2	2	1	....	8,000	4,000	.....	.....	5,000 00	.....
Plasterers	30	36	2,000	....	....	....	....	.....	.....	.....	.....	1,800 00	.....
Plate Printers, Steel and Copper	.....	.....	30	....	....	....	....	.....	.....	.....	.....	.....	.....
Plumbers	86	24	.....	....	....	....	....	.....	.....	.....	.....	33,000 00	.....
Post-office Clerks	15	1	500	....	....	....	....	.....	.....	.....	.....	.....	.....
Potters	4	1	287	....	....	....	....	.....	.....	.....	.....	.....	.....
Powder and High Explosive Workers	1	1	.....	....	....	....	....	.....	.....	10% per day *w*	.....	.....	31 50

CHARTERS, GAIN IN MEMBERSHIP AND STRIKES—*Continued.*

Organizations.	Charters issued.	Charters surrendered.	Gain in membership.	Strikes won.	Strikes compromised.	Strikes pending.	Strikes lost.	Number involved.	Number benefited.	Gain in wages.	Reduction in hours per day.	Cost of strikes.	Donations to other unions.
												$ c.	$ c.
Print Cutters	.....	.....	.....	1	....	....	....	400	450	33c per day	.....	64,000 00	200 00
Printing Pressmen	15	8	1,800	....	....	....	....	.....	.....	.....	.....	.....	.....
Pulp and Sulphite Workers	11	5	.....	3	....	3	....	200	.....	.....	.....	15,000 00	2,400 00
Quarry Workers	5	1	600	2	1	2	....	850	600	25 & 30c pr dy p	.....	6,466 90	.....
Railroad Telegraphers	6	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	750 00
Railway Carmen	83	49	2,804	....	....	....	....	9,000	.....	.....	.....	31,064 66	.....
Railway Clerks	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Railway Employees, Street	47	9	9,000	11	2	3	5	4,200	3,610	½ to 4c per hr	.....	23,696 56	240 00
Railway Express Messengers	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Roofers, Composition	5	2	.....	2	2	1	....	150	150	25 to 50c pr dy	1 and 2 hrs	1,235 00	200 00
Sawsmiths	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Seamen	6	1	.....	....	....	....	....	.....	.....	.....	.....	.....	2,697 75
Shingle Weavers	21	.....	3,500	....	1	....	....	350	300	25c per day	.....	10,000 00	500 00
Slate and Tile Roofers	3	.....	50	2	....	1	....	100	.....	10% q	.....	.....	.....
Slate Workers	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	400 00
Spinners	1	.....	.....	1	....	....	....	30	30	25c per day	.....	100 00	.....
Stage Employees, Theatrical	88	.....	1,000	5	....	....	....	100	100	.....	.....	.....	.....
Steel Plate Transferrers	1	.....	8	....	....	....	....	.....	.....	.....	.....	.....	.....
Stereotypers and Electrotypers	3	1	293	1	....	2	2	67	31	$1 to $3 pr wk*	.....	9,150 92	.....
Stonecutters	5	.....	1,500	3	....	....	1	350	200	.....	.....	3,000 00	400 00
Stove Mounters	2	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	500 00
Switchmen	6	7	1,092	....	....	....	....	.....	.....	.....	.....	.....	.....
Tailors	15	10	.....	20	1	5	2	728	.....	.....	.....	57,877 68	.....
Teamsters	96	74	4,784	27	....	2	3	11,000	10,500	30c per day	.....	6,285 00	.....
Textile Workers	15	50	4,000	3	1	3	....	1,000	.....	.....	.....	17,000 00	.....
Tile Layers	11	.....	326	2	1	1	....	150	115	25c & 35c pr dy	.....	.....	.....
Tip Printers	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Tobacco Workers	2	1	.....	....	....	....	....	.....	.....	.....	.....	.....	600 00
Travellers' Goods and Leather Novelty Workers	5	1	200	1	....	3	....	125	46	10%	½ & 1 hr prdy	1,500 00	65 00

Tunnel and Subway Constructors	2	.....	200	10	6	....	....	300	400	$1 a day	2 hrs a day	500 00	200 00
Typographical Union	30	12	2,898	8	1	4	2	169	114	*s*	.....	6,302 94	.....
Upholsterers	10	2	.....	3	....	....	....	625	.....	17% per day	.....	10,230 00	.....
Weavers, Elastic Goring	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	5 00
Weavers, Wire	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
White Rats Actors	.....	.....	.....	....	....	....	....	.....	.....	.....	.....	.....	.....
Totals	2,682	1,348	295,695	554	89	261	65	294,236	186,644	.....	.....	3,345,721 43	118,494 48

a 350 members; *b* 9-hour day established in furniture shops in New York City; *c* for 50 members; *d* for 25 members; *e* jobs finished; *f* average to each man involved in strikes; *g* 10 reinstatements; *h* in 5 mills; *i* in 5 mills; *k* won out also in 5 lockouts; *l* lost out in 1 lockout; *m* 11 lockouts pending; *n* for 3,018 members; *o* for 1,777 members; *p* for 600 members; *q* through 3 agreements. secured without strike; *r* a number of small strikes; *s* average earnings of members increased $31 for the year; *t* 5,700 members secured 8-hour day as result of enactment of 8-hour law by Ontario Legislature; *u* for 85% of membership; *v* 43 firms; *w* for 55 members; *x* in one city; *y* established 6-day working week instead of 7 for 1,500 men; *z* 6 per week in new York State and 2 per week in Rhode Island; * for 2,251 members.

BENEFITS PAID TO MEMBERS BY INTERNATIONAL ORGANIZATIONS DURING PAST YEAR.

Organizations.	Death benefits	Death benefits members' wives.	Sick benefits.	Travelling benefits.	Tool insurance.	Unemployed benefits.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
A. F. of L. locals	5,374 50	.....	8,813 06	.....	.....	.....
Bakers	3,125 00	975 00	33,870 00	.....	.....	.....
Barbers	26,625 00	.....	46,185 91	.....	.....	.....
Boilermakers	4,650 00	.....	.....	.....	.....	.....
Bookbinders	5,625 00	.....	.....	.....	.....	.....
Boot and Shoe Workers	15,825 00	.....	74,790 81	.....	.....	.....
Brick, Tile & Terra Cotta Workers	350 00	.....	.....	.....	.....	.....
Carpenters, Brotherhood.	307,069 11	35,800 00	.....	.....	.....	.....
Carriage & Wagon Workers	1,500 00	.....	.....	.....	.....	.....
Carvers, Wood	1,800 00	.....	.....	.....	31 80	.....
Cigarmakers	273,852 04	7,520 00	204,775 61	33,113 10	.....	42,911 05
Clerks, Retail	8,600 00	.....	14,225 00	.....	.....	.....
Cloth Hat ond Cap Makers	.....	.....	3,859 00	.....	.....	.....
Compressed Air Workers.	600 00	.....	.....	.....	.....	.....
Coopers	5,350 00	.....	.....	.....	.....	.....
Diamond Workers	1,500 00	50 00	1,600 00	.....	.....	720 00
Firemen, Stationary	8,000 00	.....	.....	.....	.....	.....
Foundry Employes	950 00	.....	245 00	.....	.....	.....
Glass Bottle Blowers	58,312 50	.....	.....	.....	.....	.....
GlassWork'rs, Amalg'm'd	525 00	.....	.....	.....	.....	.....
Granite Cutters	26,520 83	.....	.....	.....	.....	.....
Grinders, Pocket Knife Blade	.....	.....	54 00	.....	.....	.....
Hatters	65,000 00	.....	.....	.....	.....	.....
Hodcarriers	5,100 00	.....	.....	.....	.....	.....
Hotel and Rest. Emp.	68,662 40	.....	58,911 06	.....	.....	.....
Iron and Steel Workers	5,100 00	1,000 00	10,515 00	.....	.....	.....
Lace Operatives	3,000 00	550 00	.....	.....	.....	.....
Lathers	5,450 00	.....	.....	.....	.....	.....
Lithographers	5,300 00	.....	.....	.....	.....	.....
Machine Printers and Color Mixers	800 00	.....	.....	.....	.....	.....
Machinists	54,550 00	.....	.....	.....	.....	.....
Meat Cutters and But.Wk.	2,600 00	.....	.....	.....	.....	.....
Metal Polishers	5,000 00	.....	.....	.....	.....	.....
Metal Workers, Sheet	1,050 00	.....	.....	.....	.....	.....
Miners, Western Fed. of	34,631 97	.....	96,066 44	.....	.....	.....
Moulders	63,024 50	.....	159,434 00	.....	.....	6,276 65
Painters	113,125 00	11,825 00	6,400 00	.....	.....	.....
Papermakers	1,400 00	.....	.....	.....	.....	.....
Patternmakers	3,675 00	.....	7,053 04	.....	2,843 44	6,000 00
Paving Cutters	1,800 00	.....	.....	.....	.....	.....
Photo-Engravers	2,500 00	.....	7,865 51	.....	.....	.....
Plasterers	39,550 00	.....	.....	.....	.....	.....
Plate Printers, Steel and Copper	1,300 00	.....	1,280 00	.....	.....	.....
Plumbers	15,000 00	.....	47,000 00	.....	.....	.....
Potters	5,675 00	.....	.....	.....	.....	.....
Print Cutters	800 00	.....	.....	.....	.....	.....
Printing Pressmen	14,800 00	.....	.....	.....	.....	.....
Pulp and Sulphite Workers	.....	.....	.....	.....	.....	500 00
Quarry Workers	1,350 00	.....	.....	.....	.....	.....
Railroad Telegraphers	80,500 00	.....	.....	.....	.....	.....
Railway Employes, Street	132,300 00	.....	.....	.....	.....	.....
Roofers, Composition	2,500 00	.....	.....	.....	.....	.....
Seamen	†15,204 29	.....	.....	.....	.....	.....
Shingle Weavers	.....	.....	69 00	.....	.....	.....

BENEFITS PAID TO MEMBERS BY INTERNATIONAL ORGANIZATIONS DURING PAST YEAR.—*Concluded.*

Organizations.—*Concluded*	Death benefits.	Death benefits members' wives.	Sick benefits.	Travelling benefits.	Tool insurance.	Unemployed benefits.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Slate and Tile Roofers	1,100 00	.....	.....	.....	.....	.....
Slate Workers	700 00	100 00	.....	.....	.....	.....
Spinners	.....	.....	.....	.....	.....	13,000 00
Steel Plate Transferrers	.....	.....	.....	.....	.....	10 00
Stereotypers & Electrot'rs	3,100 00	.....	.....	.....	.....	.....
Stonecutters	9,125 00	.....	*2,000 00	.....	.....	.....
Stove Mounters	1,400 00	.....	.....	.....	.....	.....
Switchmen	181,125 00	.....	.....	.....	.....	.....
Tailors	11,883 00	.....	22,099 80	.....	.....	.....
Textile Workers	2,200 00	.....	.....	.....	.....	.....
Tobacco Workers	1,050 00	.....	5,917 00	.....	.....	.....
Travellers' Goods & Lea. Novelty Workers	150 00	.....	300 00	.....	.....	.....
Tunnel and Subway Con.	3,600 00	.....	.....	580 00	.....	.....
Typographical Union	234,457 69	.....	.....	.....	.....	.....
Weavers, Elastic Goring	100 00	.....	.....	.....	.....	28 00
Weavers, Wire	.....	600 00	850 50	.....	.....	.....
White Rats' Actors	.....	.....	2,156 67	.....	.....	.....
Totals	1,958,892 83	58,420 00	816,336 41	33,693 10	2,875 24	69,445 70

†Burial and hospital benefits. *Voluntary relief.

AVERAGE PAID UP MEMBERSHIP.

Year.	Membership.
1897	264,825
1898	278,016
1899	349,422
1900	548,321
1901	787,537
1902	1,024,399
1903	1,465,800
1904	1,676,200
1905	1,494,300
1906	1,454,200
1907	1,538,970
1908	1,586,885
1909	1,482,872
1910	1,562,112
1911	1,761,835
1912	1,770,145
1913	1,996,004

THE LAWS RELATING TO LABOUR—CHRONOLOGY OF ONTARIO LABOUR LAWS.

Apprentices' and Minors' Act. Passed, 1871. Amended, 1874. Cap. 161, R.S.O. 1897, 1911.

Mechanics' and Wage-earners' Liens. Passed, 1873. Amended, 1874, 1878, 1882, 1884, 1887, 1890, 1896, 1897. Cap. 153, R.S.O., 1897, 1901, 1902, 1904. Consolidated and amended, 1910. Previous Act repealed.

Master and Servant Act. Passed, 1873. Amended, 1886. Cap. 157, R.S.O. 1897, 1901, 1904, 1908. Consolidated and amended 1910. Previous Act repealed.

Immigration Aid Societies Act. Passed, 1873. Cap. 212, R.S.O., 1897, 1904, repealed 1905.

Act to Facilitate and Adjustment of Disputes between Masters and Workmen. Passed, 1873. Cap. 159, R.S.O., 1897.

Act Respecting Innkeepers. Passed, 1874. Amended, 1882. Cap. 187, R.S.O., 1897, 1904, 1907.

Act Respecting Public Meetings, Cap. 230, R.S.O., 1897.

Act Respecting Threshing Machines. Passed, 1874. Cap. 265, R.S.O., 1897.

Act Respecting Co-operative Associations. Passed, 1880. Amended, 1884. Cap. 202, R.S.O., 1897, 1904, 1905, repealed 1907 (see Companies' Act).

Act Respecting Safety of Railway Employees. Passed, 1881. Cap. 207, R.S.O., 1897.

Act Respecting Accidents to Employees on Railways. Passed, 1881. Cap. 266, R.S.O., 1897.

Bureau of Industries. Established, 1882.

Act Respecting Pawnbrokers. Passed, 1884. Cap. 188, R.S.O., 1897, 1907. Consolidated, 1911. Old Act repealed.

Factories Act. Passed, 1884. Amended, 1887, 1889, 1895. Cap. 246, R.S.O., 1897. Further amended, 1901, 1902, 1903, 1904, 1905, 1908, 1911.

Act Respecting Wages. Passed, 1888. Cap. 156, R.S.O., 1897, 1899. Consolidated and amended 1910. Previous Act repealed.

Workmen's Compensation for Injuries Act. Passed, 1886. Amended, 1887. 1893, 1896, 1899. Cap. 160, R.S.O., 1897.

Lord's Day Observance Act. Passed, 1885. Cap. 246, R.S.O., 1897 1903. 1904.

Shops Regulation Act. Passed, 1888. Amended, 1889-1897. Cap. 257, R.S.O., 1897. Further amended, 1900, 1901,1903, 1904, 1908.

Egress from Public Buildings Act. Passed, 1888. Cap. 263, R.S.O., 1897.

Trades Disputes Act. Passed, 1890. Amended, 1894, 1897. Cap. 158, R.S.O., 1897. Further amended, 1902. Consolidated and amended, 1910. Previous Act repealed.

Woodmen's Lien Act. Passed, 1891. Amended, 1894, 1896, 1897, 1899. Cap. 154, R.S.O., 1897, 1903. Consolidated and amended, 1910. Previous Act repealed.

Act Respecting Stationary Engineers. Passed, 1891. Cap. 185, R.S.O , 1897, 1906, 1907, 1908, 1909. Consolidated and amended, 1911. Previous Act repealed.

Miners Act. Passed, 1892. Cap. 36, R.S.O., 1897, 1905, repealed, 1906.

Matters under Municipal Act. 1892, 1893, 1894, 1895, 1898. Cap. 223, R.S.O., 1897, 1904, 1905, 1906.

Insurance by Trade Unions. Passed, 1892. Amended, 1897. Cap. 203, R.S.O., 1897.

Act Respecting School for Artisans. Passed, 1892. Amended, 1895. Cap. 223, R.S.O., 1897.

Act Respecting Truancy and Compulsory School Attendance. R.S.O., Cap. 196, 1897. Amended, 1904. New revised Act repealing this, 1909.

Act Respecting Lien for Wages on Street Railways. Passed, 1895. Cap. 208, R.S.O., 1897, 1906. (See Railway Act.)

Labour on Public Works. Passed, 1896. Amended, 1897. Cap. 155, R.S.O., 1897, 1900. Consolidated and Amended, 1910. Previous Act repealed.

Act Respecting Liability of Directors' Companies for Wages. Passed, 1896. Sec. 85, Cap. 191, R.S.O. 1897. Repealed 1907. (See Companies' Act.)

Act Respecting Liability of Mining Companies for Wages. Passed, 1896. Cap. 197, R.S.O., 1897, 1906. (See Mines Act.)

Act Respecting Technical Schools. Passed, 1897. Amended, 1911. Previous Act repealed.

Act Respecting Immigration of Children. Passed, 1897. Cap. 262, R.S.O., 1897.

Resolution Respecting Fair Wages on Public Works. Passed, 1900.

Act Creating Bureau of Labor. Passed, 1900. Revised, 1910. (See below.)

Act Respecting Mines. Passed, 1906, 1908, 1909, 1911, 1912.

Act Respecting Steam, Electric and Street Railways. Passed, 1906.

Act for Appointment of Railway and Municipal Board. (Trade Disputes provisions.) Passed, 1906. Amended, 1907.

Act Respecting Joint Stock and Other Companies. Passed, 1907, 1912.

Act Respecting the Manufacture and Sale of Bread. Passed, 1908.

Stenographic Reporters' Act. Consolidated, 1911. Old Act repealed.

Building Trades Protection Act. Passed, 1911.

Act Respecting Compulsory School Attendance of Adolescents, 1912.

The Mining Amendment Act, 1912, with respect to hours underground.

An Act Respecting the Bureau of Labour.

S. O. 1910, Cap. 13. *Assented to 7th March,* 1910.

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

1. This Act may be cited as the Bureau of Labour Act.

2. There shall be attached to the Department of the Commissioner of Public Works a bureau, to be styled "The Bureau of Labour."

3. The Lieutenant-Governor may appoint a Secretary of the said Bureau and may also appoint such other officers as may be necessary for the proper conduct of the Bureau.

4. It shall be the duty of the Bureau to collect, assort and systematize and publish information and statistics relating to employment, wages and hours of labour throughout the Province—co-operation, strikes, lock-outs or other labour difficulties, trades unions, labour organizations, the relations between labour and capital, and other subjects of interest to working men, with such information relating to the commercial, industrial, and sanitary condition of working men, and the permanent prosperity of the industries of the Province, as the Bureau may be able to gather.

5. Chapter 14 of the Acts passed in the sixty-third year of Her Late Majesty's reign is repealed.

LEGISLATION AFFECTING LABOUR

ONTARIO.

The Providing of Housing Accommodation.

An important Act was passed to encourage housing accommodation in cities and towns. This law enables city or town councils to guarantee the bonds of an incorporated company, with a share capital, whose main purposes are the acquisition of lands in or near a city or town in Ontario, and the building thereon of moderate sized dwellings to be rented at moderate rents, if the council is satisfied that additional housing accommodation is urgently needed, and provided that the main purpose of the company is to help in supplying need and not to make profits. The by-law guaranteeing the bonds must be approved either by the ratepayers or by the Provincial Board of Health. Before the guarantee is given the location of the lands selected and the general plans for the houses shall be approved by the council, or a committee thereof. The total amount of the securities to be guaranteed shall not in the first instance exceed 85 per cent. of the value of the lands and improvements. A council which guarantees the bonds of such a company may be represented on the Board of Directors by one member of the Board. The company may not declare a dividend exceeding six per cent. per annum, but if the dividends in any year do not amount to six per cent. the deficiency with interest may be made up in any subsequent year or years. Any profits remaining after paying a six per cent. dividend, making up any deficiencies, and providing a reasonable contingent fund, shall be expended in acquiring more lands, improving the housing accommodation, or redeeming the capital stock. The shares so redeemed shall not become extinct, but shall be held by a Board of Trustees.

Amendments to the Factories Act.

The Factory, Shop, and Office Building Act contains a number of new features with respect to factory legislation, the principal ones of which are as follows: The power of inspection is extended for the first time to offices. Plans of a factory building must be submitted by the owner to the inspector before it is erected or altered, and the building shall not be proceeded with until the plans are approved. No person is allowed to take food into any room where paint, varnish, dye, white lead, arsenic or any other poisonous substances is exposed, or where deleterious fumes, dust, or gas are known to be present. Employers of offices are required to maintain their premises in a sanitary condition. No person shall sell bread or buns manufactured out of Ontario without the written permission of an inspector. Regulations may be made by the Lieutenant-Governor-in-Council with reference to the fencing or guarding of anything which is considered to require to be safely fenced or guarded.

Boiler Inspection.

The Steam Boiler Act amplifies the Act of 1910 in many particulars. Provision is made for the appointment of Boiler Inspectors with power to inspect all boilers except those used in residences or public buildings exclusively for heating purposes, when provided with an improved device limiting the pressure to fifteen pounds to the square inch. and portable boilers rated at twenty-five horse-power or under used exclusively for horticultural or agricultural purposes. The Minister many employ any boiler insurance company registered in the Department of Insurance, or any inspection company engaged in this work, to make an inspection

of steam boilers during their construction and report to the Chief Boiler Inspector. Penalties are imposed for interfering with any inspector in the performance of his duty, and for refusing to attend before the inspector after being called upon to do so. A fee of $5 is charged for an inspection certificate issued to the owner or manufacturer after a boiler inspection has been made.

Hours of Underground Employment in Mines.

The Mining Act of Ontario was amended by the insertion of a clause providing that no workman shall remain underground in any mine for more than eight hours in any consecutive twenty-four hours, the eight hours to be reckoned from the time he arrives at his place of work in the mine, until the time he leaves such place. This does not apply to a shift boss, pump man, cage tender, or any person engaged solely in surveying or measuring. An exception is also made to a Saturday shift, which may work longer hours to avoid Sunday labour, or to a change shift at the end of the week, or to give any of the men a part holiday. The Act is to come in force on January 1, 1914.

Railway and Municipal Board Act.

The Railway and Municipal Act is amended with regard to arbitration of labour disputes, by including public utility companies within the scope of the Board, and by providing that the written submission of a dispute to the Board shall (instead of "may") contain a statement of the matters in dispute and an agreement to abide by the decision of the Board.

Motor Vehicles Act.

The Motor Vehicles Act was amended by a provision for the appointment of "automobile constables" and for compelling drivers of motor vehicles to obtain a certificate signed by two members of the Ontario Motor League and the chief constable of their district, testifying as to their fitness and ability.

ALBERTA.

Mining.

A Mines Act was placed on the statute book which considerably enlarged previous legislation and took the place of the Coal Mines Act of 1906. The applicability of the Act is extended to mines producing any minerals instead of being confined to mines of coal, ironstone, shale and fireclay (sec. 2). A shaft is defined as a "vertical" opening that is used for the purpose of ventilation or drainage or for the ingress or egress of persons, animals or materials to or from a mine or any part thereof. With regard to the employment of persons in mines, no one is allowed to have charge of an engine, wholly or in part, used for conveying persons from one part of the mine to another, unless he is a male person of at least eighteen years of age. Sixteen years is the minimum age for persons in control of a horse or other animal used for the same purpose (sec. 6). The minimum age for boys working at a mine above ground is raised from twelve to fourteen years. No woman or girl of any age may be employed or permitted to work in or about any mine except in an office above ground, connected with the mine. In the case of misrepresentation of age by parent or guardian, the employer is exempt from liability (sec. 8). No workman may be underground in a mine for more than eight hours during any consecutive twenty-four hours

unless under exceptional circumstances, such as rendering assistance in the event of an accident or to prevent interference with ordinary work in the mine or to avoid work on Sunday (sec. 9). Authority is given for the suspension of provisions of the Act limiting hours of work below ground in the event of great emergency of economic disturbance due to the demand for coal exceeding the supply available at the time (sec. 11). The safety of employees is provided for by the prohibition of single outlets at more than a certain distance apart, and the provision of proper apparatus for the descent and ascent of persons at such outlets (sec. 13). Wages earned from the first day to the fifteenth of each month must be paid on the first Saturday of the following month, and the wages earned from the sixteenth to the last day of the month on the third Saturday of the following month (sec. 34). The Act requires a record of the amount of ventilation passing in every mine to be sent monthly to the Minister and the District Inspector. The general rules laid down for observance are consolidated and strengthened in the new form of the Act. The minimum amount of ventilation is raised from one hundred feet for each person to two hundred feet (sec. 58). Special provisions call for the registration of every employee (sec. 93). No persons occupying a position of trust is to delegate his work to another without the consent of his superior (sec. 95). No person having charge of others, or machinery, may leave work unless relieved (sec. 96). Intoxicating liquor is prohibited in the mines without the manager's consent (sec. 100), nor may any person ride on a car in or about the mine without the manager's consent (sec. 103). Important sections are those setting forth the duties of the overman, shot-lighter, lampman and other employees.

Building Trades Protection Act.

Provision is made for the protection of workmen employed in the building trades by legislation somewhat similar to that enacted during the 1912 session in the Provinces of Manitoba and Saskatchewan. Prohibition is made of the use of scaffolding hoists, ladders, etc., of an unsafe nature in the erection, alteration or repair of any building (sec. 5).

Workmen's Compensation.

The scope of the Workman's Compensation Act is widened by an amendment, making its provisions applicable to persons employed on any building. Previously it applied only to workmen on buildings exceeding thirty feet in height. The amendment also makes the employer not liable for injury which does not disable the workman from earning full wages. Previously a time limit of two weeks was included.

Steam Boilers Act.

An amendment is made to the Steam Boilers Act of 1911-1912. Included in the duties of inspectors is authority to order the engineer in charge of a boiler having a defect which may cause danger to draw the fire and blow off the steam. A proviso is added in the amendment that no inspector may give such an order in the case of a boiler on which depends the operation of a ventilating fan, the stopping of which might endanger the life of any man working in a mine. In such cases sufficient notice must first be given to the manager to enable him to make the necessary precautions for the protection of a mine and the safety of the employees therein.

Thresher Employees' Lien Act.

The Thresher Employees' Lien Act gives an employee working on a threshing machine a claim to the extent of his earnings against the earnings of his employer in the hands of a third person for whom such threshing has been done. Notification of the claim must be given while the threshing is being done. Other conditions of claims are set forth in the Act.

MANITOBA.

Female Labour.

A measure was passed to forbid the employment of white females by Orientals. This Act is similar to one passed during the 1912 session of the Saskatchewan Legislature and provides under penalty of a heavy fine that "no person shall employ in any capacity any white woman or girl to reside or lodge in, or to work in, save as a *bona fide* customer in a public apartment thereof, or to frequent any restaurant, laundry or other place of business or amusement owned, kept or managed by any Japanese, Chinaman, or other Oriental person."

Workmen's Compensation.

A number of amendments were passed considerably widening the scope of the Workmen's Compensation Act which received the Royal assent on March 16, 1910, and went into effect at the beginning of the following year. Provision is made for a reduction of the period during which an injured employee is not entitled to any compensation from two weeks to one week. If the worker is incapacitated by an injury for more than one week compensation begins at the end of the first week instead of at the end of the second week, as has previously been the case. This amendment brings a much larger number of accidents under the Act. Another important amendment has the effect of bringing dependents living within the British Empire within the provisions of the Act. Previously the Act applied only to those dependents resident in Manitoba, while in future dependents of employees killed in the industries affected by the Act will be entitled to the full limit of compensation though not residing in the province, providing that they reside in any part of the British Empire. Two other important amendments were made, one extending the time during which proceedings for recovery of claims can be begun from six months to one year, the other enabling a claimant to sue an individual member of a firm in case the firm itself is not in a state of solvency. The amendments went into force on February 15, 1913.

Protection for Workmen.

Reference is made in the November, 1912, issue of the *Labour Gazette* to the enactment, during the session of 1912, of legislation for the protection of workmen employed in the construction of buildings. To enforce the provisions of this act, an inspector was appointed later, and the amendments passed during the session under review made it compulsory for employers to notify the inspector immediately of the occurrence of an accident causing injury to a person in his employ. Such notification has to give the name and address of the employer, the name of the injured person and the cause of the injury and the date at which the accident happened. Another measure for the safe-guarding of lives of workers is an amendment to the Public Utilities Act of 1912. Authority is given to the commission to

impose and enforce regulations for the safety and protection of employees of any public utilities and to enforce regulations in the case of accidents in connection with a public utility with a view to remedying the cause thereof, and preventing further occurrence.

Lien Act.

An amendment to the Mechanics' and Wage Earners' Lien Act provides that a defendant may within sixteen days after being served with a statement of claim, file in the office of the Court a statement of defence showing clearly and concisely the nature of his defence and serve on the plaintiff or his solicitor a copy thereof, and if he fail to do so he shall, unless otherwise ordered by a judge, be precluded from disputing the plaintiff's claim and right to a lien, and the plaintiff shall have the right to sign interlocutory judgment against the defendant in a manner similar to the signing of such judgment in an action in the King's Bench.

NEW BRUNSWICK.

Fair Wage Schedule.

By an Act passed on March 20, 1913, to go into effect on and after its passage, provision is made for the attaching to every contract of the Public Works Department of the Province whereby labour is done, of a fair wage schedule. It is required that such schedule contain the wages that are fair, usual and customary at the time of the letting of the contract in the locality where it is to be performed.

NOVA SCOTIA.

Workmen's Compensation.

Workmen earning more than one thousand dollars per year were not included in the provisions of the Act as it previously existed. The applicability of the Act is widened by the 1913 amendment, and it now includes in its definition of workman a person earning less than twelve hundred dollars a year. If a contract or an agreement is entered into by a workman in consequence of personal injury by an accident arising out of his employment such arrangement is not to constitute a bar to his proceeding for recovery under the provisions of the Act, unless the consideration is in the opinion of the arbitrator, court, etc., before whom any dispute is brought, an adequate onus on the employer concerned. The employer must prove the adequacy of the compensation. In arranging the scale and conditions of compensation provision is made that in regard to weekly payments during total incapacity of the workman under twenty-one years of age at the date of the injury and whose earnings are less than five dollars, the whole amount of such average weekly earnings shall be allowed as compensation. A clause in the first schedule of the Act states that any weekly payment may be ended, diminished or increased, subject to the maximum and minimum provided, on a review at the request of the workman or employer. An amendment passed during the 1913 session adds a proviso that in the case of the workman being at the date of the accident under twenty-one years of age and the review taking place more than twelve months after the accident, the amount of the weekly payment may be increased to any amount not exceeding fifty per cent. of the weekly sum which the workman would probably have been earning at the date of his review if he had remained uninjured. In any case the amount is not to exceed seven dollars.

Mines Regulation.

The Metalliferous Mines Regulation Act was passed which embodies in a more stringent form the provisions of the Act of the same name as contained in the revised statutes of 1900. The following are some of the changes: When a mine has been abandoned the owner can be required to send a plan to the Commissioner of Public Works and Mines. The Act in its original form required such a plan to be on a scale of at least 132 feet to an inch; the amended form of the Act reduces the minimum scale to 100 feet to an inch. The law is made more stringent in regard to the storage of explosives. Previously their storage was prohibited only in the mine; the amendment prohibits their storage within two hundred and fifty yards of the slope, shaft or quarry. Only twenty-five pounds per day may now be taken into the mine, whereas previously fifty was the maximum amount allowed by the law. The law is further strengthened by an addition prohibiting the storage of detonators with explosives, nor may they be kept in any place within two hundred feet of such explosives. The section requiring signals on back balances or quarter balances used for raising or lowering minerals is made more stringent by an amendment requiring such signals to be in force in balances for raising and lowering materials as well as minerals. The provision concerning the fencing at the top of shafts out of use is strengthened by an addition requiring the notifications to the proper authorities of the case and imposing the liability to be called upon for further precautions for safety if deemed necessary. An Act was passed authorizing the appointment of a commission to enquire into and report upon the uses of electricity in the mines of Nova Scotia with special reference to the safety of its use in the mines of the Province and the regulations and rules necessary for its use, if recommended and adopted. An addition made to the Coal Mines Regulations Act establishes the legality of the use of electric lamps of approved style, provided that no such lamps be used for examination for the detection of inflammable gas.

Woodmen's Liens.

An Act was passed with respect to woodmen's liens for service. Any woodman performing labour in connection with logs or timber within the province of Nova Scotia is to have a lien thereon for the amount due for such labour, the same having priority over all other claims except any lien claim held by the Crown upon such timber.

QUEBEC.

Industrial Establishments Act.

An amendment was made to the Industrial Establishment Act. As the Act originally stood the minimum age for boys employed in factories was fixed at twelve years. Later the age was raised to thirteen and afterwards fourteen. Child labour as defined in the original Act disappeared entirely, though the word "child" was not struck out. The present amendment removes an anomalous definition of the term "child."

Protection of Workmen in Mines.

An Order-in-Council was passed providing regulations looking to the protection of employees engaged in the operation of mines in the Province. The following are the terms of the Order-in-Council: When persons employed in the working of mines are hoisted or lowered by means of a steam or electric hoist, this hoist

shall not be in charge of a person of less than twenty years of age. The storing of explosives shall be in magazines or powder-houses, built to the satisfaction of the Inspector of Mines. Such magazines shall not be built nearer than four hundred feet from the mine of works, or from any public highway, without a special authorization from the Inspector of Mines. Only implements of wood, brass or copper shall be used in opening cases containing explosives. Blasting caps, detonators or fulminates of any sort shall in no case be kept of stored with the explosives. In underground workings, no supply greater than that necessary for the next twenty-four hours shall be kept, and this supply shall be stored in wooden boxes, in a part of the mine not less than 100 feet distant from all drilling or mining work. Such supply shall be in charge of an experienced man, who will apportion the explosives as they are needed. In charging holes, no iron or metal tools shall be used for tamping. When the enclosing rocks are not safe, shafts, winzes, level and other underground workings in use shall be suitably timbered, cased or lined, or otherwise made secure. The ladder in shaft or winze shall be in lengths not exceeding twenty-five feet each, with platforms at each of these intervals. These platforms shall be closely covered, with the exception of an opening just large enough to permit the passage of a man's body, so arranged that it would not be possible for a person to fall through this opening from one ladder-length to the one below. The ladderway shall be encased by a closely boarded partition, separating it completely from the compartment of the shaft used for hoisting the material. No person shall be hoisted or lowered by means of buckets or skirs without vertical guides.

Bureau of Statistics.

By an Act which was assented to on December 21, the Quebec Bureau of Statistics was established to collect and publish information respecting agriculture, commerce, industry, and other matters of concern to the Province.

SASKATCHEWAN.

Steam Boilers Act.

An amendment to the Steam Boilers Act provides for additional protection.

Workmen's Compensation Act.

An important amendment was made to the Workmen's Compensation Act by the addition of the section rendering it necessary for every employer in the case where a workman in his employ has been incapacitated by an accident to report such accident to the Secretary of the Bureau of Labour, together with all the details of the injury.

Protection for Excavators.

The Building Trades Protection Act is amended to give protection to men working in excavations at a depth of four feet or more.

Threshing Act.

By an amendment to the Employees' Threshing Act an employee is given twenty days instead of ten as before within which to serve a claim against the employer for work done.

White Women Employment.

An Act passed during the last session of the Legislature prohibits the employment of a white woman by a Japanese, Chinese, or other Oriental. An amendment passed during the session under review confines this prohibition to Chinese.

Highway Work.

An amendment to the Public Works Act gives the Lieutenant-Governor-in-Council power to put under the control of Highway Commissioners all matters pertaining to the construction and maintenance of highways, such as road-building, bridge work, surveys and ferries. This brings the highway work under the control of one officer instead of under two, as was previously the case when these matters were partly attended to by the Department of Public Works and partly by the Board of Highway Commissioners.

BRITISH COLUMBIA.

Factories Act.

An amendment is made to the Factories Act extending the powers and duties of inspectors appointed under the Act. Authorization is given to such inspectors to examine elevators in factories, hotels and shops of more than two stories in height and to prohibit the use of any such elevator until it has been pronounced to be safe for the carriage of passengers.

Motor Traffic.

An amendment to the Motor Traffic Regulation Act gives an extention to the time limit during which cars may be operated in the Province without registration.

Employment Agencies.

Legislation was enacted making it unlawful for anyone in the Province to conduct an employment agency or to obtain fees in connection with the hiring of employees without being the holder of a certificate signed by the Superintendent of the Provincial Police of British Columbia. A section of the Act prohibits the charging of greater fees than those prescribed in respect of the hiring of employees. A license-holder must not take employees as lodgers, nor have any share or interest in the keeping of a lodging house for employees. Provision is made for the prescribing from time to time of rules for the conducting of employment agencies, including a form of contract or agreement to be made between any license-holder and employee.

Shops Regulation Act.

Some amendments were made to the Shops Regulation Act. The term "inspector" which previously included any inspector appointed under the provisions of the Act was specified to denote a person appointed by the municipal council to discharge the duties of inspector and in unorganized districts the Inspector of Factories. Employers are made liable to prosecution if the water closets, etc., of

any shop are not provided and kept clean and well ventilated. The power of enforcing the provisions of the Act is transferred from the Superintendent of Police to the Inspector of Factories.

Girls' Industrial Home.

An Act was passed establishing an industrial home for girls.

LIST OF LABOUR BUREAUS AND WHEN ORGANIZED.

During the past forty years labour's interests have become so important a factor with representative Governments throughout the world that they deemed it necessary to create Labour Bureaus for the purpose of collecting accurate statistics of the progress of a nation's prosperity arising from commercial, mechanical and agricultural pursuits. The success of these undertakings has proved most satisfactorily, as is shown by the following list of Labour Bureaus compiled from official records:—

Ontario.—The Bureau of Labour was created by an Act passed by the Ontario Legislature, April 25th, 1900, and amended in 1910. The Department is under the direction of Hon. J. O. Reaume, Minister of Public Works. Secretary of the Labour Bureau, Robert Edgar, Toronto, Ont.

Saskatchewan.—Secretary Bureau of Labour, Thos. M. Molloy, Regina, Sask.

Canada.—The Department of Labour was established in July, 1900, and practically supersedes the Bureau of Labour of the Department of Agriculture, established in 1890, with Mr. George Johnson as chief clerk. The Department is now a separate portfolio, with Hon. T. W. Crothers as Minister. The Act establishing the Department provides for the monthly issuing of a Labour Gazette, the editor of which is F. A. Acland, Deputy Minister of Labour. The first number of the Gazette was issued in September, 1900.

Great Britain.—The Labour Bureau of the Board of Trade was established March 2nd, 1886. In 1893 the service was greatly enlarged, and given its present name, "Board of Trade Labour Department." A. Wilson Fox, Chief Secretary. It publishes monthly The Labour Gazette; also annual reports.

New Zealand Department of Labour.—The Right Hon. J. A. Miller, Minister of Labour. E. Tregear, Secretary, Wellington, N.Z.

New South Wales.—Department of Labour and Industry. T. B. Clegg, Chief Clerk, Sydney, N.S.W.

Queensland.—Department of Immigration.—Government Labour Bureau and Relief. Chief Clerk, Brisbane, Queensland.

South Australia Labour Bureau.—Chief Clerk, A. C. H. Richardson, Adelaide, South Australia.

West Australia.—Government Statistician, Malcolm A. C. Fraser, Perth, West Australia.

United States Department of Labour.—Established as a Bureau of Labour, January 31th, 1885; made a Department of Labour, June 13th, 1888. Bi-monthly bulletins. Annual reports. Commissioner of Labour. Chas. P. Neill, Washinton, D.C.

United States Census Office.—E. Dana Durand, Director of Census, Washington, D.C.

Massachusetts Bureau of Statistics of Labour.—Established June 23rd, 1869. Quarterly bulletins. Annual reports. Chief of the Bureau of Statistics of Labour, Ch. F. Gettemy, Boston, Mass.

Pennsylvania Bureau of Industrial Statistics.—Established April 12th, 1872. Annual reports. Chief of Bureau of Industrial Statistics, John L. Rockey, Harrisburg, Pa.

Connecticut Bureau of Labour Statistics.—Established July 12th, 1873. Abolished July 23rd, 1875. Re-established April 23rd, 1885. Annual reports. Commissioner of Labour, Patrick H. Connolly, Hartford, Conn.

Kentucky Bureau of Agriculture. Labour and Statistics.—First established March 20th, 1876, as a Bureau of Agriculture, Horticulture, and Statistics; the duties of the Bureau were enlarged and the present name adopted April 2nd, 1892. Biennial reports. Commissioner of Agriculture, Labour and Statistics, J. W. Newman, Frankfort, Ky.

Missouri Bureau of Labour, Statistics and Inspection.—Established March 19th, 1879; enlarged March 23rd, 1883. Annual Report. Commissioner of Labour, A. W. Biggs, Jefferson City, Mo.

Ohio Bureau of Labour Statistics.—Established May, 1887. Annual reports. Commissioner of Labour, C. H. Wirmel, Columbus, Ohio.

New Jersey Bureau of Statistics of Labour and Industries.—Established March 27th, 1878. Annual reports. Chief of the Bureau of Statistics of Labour and Industries, W. C. Garrison, Trenton, N.J.

Illinois Bureau of Labour Statistics.—Established May 29th. 1879. Biennial reports. Secretary of the Bureau of Labour Statistics, David Ross, Springfield, Illinois.

Indiana Bureau of Statistics.—Established March 29th, 1879. Biennial reports. Chief of the Bureau of Statistics, J. J. Walsh, Indianapolis, Ind.

New York Bureau of Labour Statistics.—Established May 4th, 1883; created a Department of Labour, 1902. Commissioner of Labour, John Williams, Albany, N.Y. Quarterly bulletins. Annual reports.

California Bureau of Labour Statistics.—Established March 3rd, 1883. Biennial reports. Commissioner of Labour, J. P. McLauglin, San Francisco, Cal.

Michigan Bureau of Labour and Industrial Statistics.—Established June 6th, 1883. Annual reports. Commissioner of Labour, G. F. Powers, Lansing, Mich.

Wisconsin Bureau of Labour Statistics.—Established April 3rd, 1883. Biennial reports. Commissioner of Labour, J. D. Beck, Madison, Wis.

Iowa Bureau of Labour Statistics.—Established April 3rd, 1884. Biennial reports. Comissioner of Labour, E. W. VanDuyn, Des Moines, Iowa.

Maryland Bureau of Industries of Statistics.—Established March 27th, 1884. Annual reports. Chief of the Bureau of Industries Statistics, Chas. J. Fox, Baltimore, Md.

Kansas Bureau of Labour Statistics.—Established March 5th, 1885. Annual reports. Commissioner of Labour, Owen Doyle, Topeka, Kan.

Rhode Island Bureau of Labour Statistics.—Established March 29th, 1887. Annual reports. Commissioner of Labour, Geo. H. Webb, Providence, R.I.

Nebraska Bureau of Labour and Industrial Statistics.—Established March 31st, 1887. Biennial reports. The Governor, *ex-officio* Commissioner. Deputy Commissioner of Labour and Industrial Statistics, Louis V. Guye, Lincoln, Neb.

North Carolina Bureau of Labour Statistics.—Established February, 28th, 1887. Annual reports. Commissioner of Labour, M. L. Shipman, Raleigh, N.C.

Maine Bureau of Labour Statistics.—Established March 7th, 1887. Annual reports. Commissioner of Labour, J. F. Connelly, Augusta, Me.

Minnesota Bureau of Labour.—Established as a Bureau of Labour Statistics, March 8th, 1887; enlarged and changed to the Bureau of Labour, April, 1893. Biennial reports. Commissioner of Labour, W. F. Houk, St. Paul, Minn.

Oklahoma Department of Labour.—Established September, 1907. Commissioner of Labour, Charles L. Daugherty, Guthrie, Okla.

Colorado Bureau of Labour Statistics.—Established March 24th, 1887. Biennial reports. Commisioner of Labour, E. V. Brake, Denver, Col.

West Virginia Bureau of Labour.—Established February 22nd, 1889. Annual reports. Commissioner of Labour, I. V. Barton, Wheeling, W. Va.

North Dakota Department of Agriculture and Labour.—Established October 1st, 1890. Biennial reports. Commissioner of Labour, W. C. Gilbreath, Bismark, N.D.

Montana Bureau of Agriculture, Labour and Industry.—Established February 17th, 1893. Annual reports. Commissioner of Labour, J. H. Hall, Helena, Mont.

New Hampshire Bureau of Labour.—Established March 30th, 1893. Biennial report. Commissioner of Labour, J. E. D. Davie, Concord, N.H.

Washington Bureau of Labour.—Established June 11th, 1897. Annual reports. Commissioner of Labour, C. F. Hubbard, Olympia, Wash.

Idaho Bureau of Labour and Mining Statistics.—Established March 11th, 1895. Annual reports. Commissioner of Labour, Jos. P. Fallon, Boise City, Idaho.

Virginia Bureau of Labour and Industrial Statistics.—Established March 3rd, 1898. Annual report. Commissioner of Labour, James B. Doherty, Richmond, Va.

Louisiana Bureau of Statistics of Labour.—Established July 9th, 1900. Biennial reports. Commissioner of Labour, Jas. Byrnes, New Orleans, La.

Oregon Bureau of Labour Statistics and Inspection of Factories and Workshops.—Established June 3rd, 1903. Biennial reports. Commissioner of Labour and Inspector of Factories and Workshops, O. P. Hoff, Salem, Ore.

Tennessee Bureau of Labour, Mines and Mineral Department.—Established 1891. Commissioner of Labour, R. A. Shiflett, Nashville, Tenn.

South Carolina Department of Agriculture, Commerce, and Industry.—Re-organized 1909. Commissioner, E. J. Watson, Columbia, S.C.

Porto Rico Bureau of Labour.—Established 1912. Chief J. C. Bills, Jr., San Juan, Porto Rico.

Argentine Republic.—Francoise Latzina, Director General de la Statistique de la Republique Argentina (Ministere de l'Interieur), Buenos Ayres.

Austria-Hungary.—Commission Central of Statistics (Minister of Public Instruction). Dr. Karl Theodor von Inama Sternegg, President, Vienna. Department of Municipal Statistics, Dr. Sedlatzek, Chief, Vienna.

Bavaria.—Royal Bureau of Statistics (Department of Interior). Karl Rasp, Director, Munich.

Belgium.—Royal Bureau of General Statistics (Minister of the Department of the Interior and Public Instruction). Edmund Nicoali, Chief, Brussels.

Brazil.—Dr. R. Pompeia, Director de Bureau de Statistique des Estats Unis du Bresil (Ministere de l'Interieur), Rio Janeiro.

Bulgaria.—Bureau of Statistics of Bulgaria (Minister of Public Instruction). F. Ivanchoff, Director, Sophia.

Chili.—Don Francisco S. Asta Burnaga, Chef du Bureau Central de Statistique de Chili, Santiago.

Denmark.—Royal Bureau of Statistics (Minister of Finance). Marius de Gad, Director, Copenhagen.

France.—Office du Travail (Ministere du Travail, Paris.

Victor Furquan, Chef du Bureau de la Statistique General de France (Ministere du Commerce et de l'Industrie).—Office du Travail, Paris.

Germany.—Imperial Office of Statistics (Department of Interior). Dr. F. W. Hans Von Schell, Director, Berlin.

Herzegovina.—Bureau of Statistics of Bosnia and Herzegovina. Dr. Ferdinald Schmidt, Director, Sarajevo.

Holland.—Herr Methour, Director of Netherlands Statistical Central Office. La Haye, Netherlands.

Italy.—Directeur General de la Statistique du Royaume, G. Montemartini, Director dell' Offices del Lavoro (Ministere de l'Agriculture, de l'Industrie, et du Commerce), Rome.

Japan.—N. Hanausa, Chef du Bureau General de la Statistique (Cabinet Imperial), Tokio.

Mexico.—Antonio Penafiel, Directeur General de la Statistique de la Republique (Mexicaine du Fomento), Mexico.

Paraguay.—I. Jasquet, Director General de la Statistique du Paraguay, Assumption.

Portugal.—Ernesto Madeira Pinto, Director General of Statistics of Commerce (Minister of Public Works, Commerce and Industries), Lisbon.

Prussia.—Royal Bureau of Statistics (Minister of the Department of the Interior). Karl Julius Emil Blenck, Director, Berlin.

Office of the Statistics of the City of Berlin. Dr. Richard Bockh, Director, Berlin.

Roumania.—C. E. Cupenski, Director de la Statistique General du Royaume (Minister de l'Agriculture, de l'Industrie, du Commerce, et des Domaines), Bucharest.

Russia.—Bureau, Directeur du Comite Central de Statistique (Ministere de l'Interieur), St. Petersburg.

B. Grigoreff, chef Bureau de la Statistique Municipale, Moscow.

Saxony.—Bureau of Statistics of the Minister of State. Dr. Victor Bohmert, Director, Dresden.

Spain.—Ing. Francisco de Paulo de Arrillaga, Director General of the Geographic Institute and Bureau of Statistics of Spain, Madrid.

Styria.—Bureau of Statistics of Styria. Dr. Ernest Michler, Director, Gratz.

Sweden.—Dr. Elis Sidenbaldh, Director en Chef du Bureau Central de Statistique de Royaume (Minister de l'Interieur, Stockholm.

Norway.—Anders Nicolaikiser, Directeur du Bureau Central de Statistique du Royaume (Ministere de l'Interieur), Christiana.

Switzerland.—Dr. Louis Guillaume, Directeur du Bureau Federal de Statistique (Ministere de l'Interieur), Berne.

Stephen Bauer, Office International du Travail, Basle, Switzerland.

Uruguay.—Honore Roustan, Director du Bureau de la Statistique General, Montevideo.

LIST OF NATIONAL AND INTERNATIONAL LABOUR ORGANIZATIONS

With Names and Addresses of General Secretaries, Having Subordinate Organizations in the Province of Ontario.

Trades and Labour Congress of Canada, P. M. Draper, Box 1017, Ottawa, Ont.

American Federation of Labour, Frank Morrison, 801-9 G. Street, N.W., Washington, D.C.

Actors' National Protective Union, W. W. Waters, 1553 Broadway, New York, N.Y.

Allied Metal Mechanics' International Association, John E. Bray, 407 Nelson Building, Kansas City, Mo.

Asbestos Workers of America, T. J. McNamara, 1801 Elliott Avenue, St. Louis, Mo.

Bakers' and Confectioners' International Journeymen, Otto E. Fischer, 212 Bush Temple of Music, Chicago, Ill.

Barbers' International Union, Journeymen, Jacob Fischer, Box 517, Indianapolis, Ind.

Bill Posters and Billers of America, W. McCarthy, 1490 Broadway, New York.

Brushmakers' International Union, Geo. J. Vitzhun, 2052 Gates Avenue, Brooklyn, N.Y.

Blacksmiths' International Brotherhood of, W. F. Kramer, Rooms 570-585 Monon Building, Chicago, Ill.

Blast Furnace Workers and Smelters of America, International Association, William J. Clarke, 128 Sandusky Street, Buffalo, N.Y.

Boilermakers and Iron Shipbuilders of America, W. J. Gilthorpe, Room 7, Law Building, Kansas City, Kansas.

Bookbinders, International Brotherhood of, J. W. Dougherty, 222 E. Michigan Indianapolis, Ind.

Boot and Shoe Workers' Union, C. L. Baine, 246 Summer Street, Boston, Mass.

Brewery Workers, International Union of, Joseph Proebstle, Station E., Cincinnnati, O.

Brick, Tile and Terra Cotta Workers, International Alliance, Wm. Van Bodengraven, 160 N. Fifth Avenue, Chicago, Ill.

Bridge and Structural Ironworkers, International Association of, Joseph E. McClory, 422 American Central Life Building, Indianapolis, Ind.

Broommakers' International Union, C. T. Dolan, 3959 Lincoln Avenue, Chicago, Ill.

Bricklayers' and Masons' International Union, William Dobson, Oddfellows Building, Indianapolis, Ind.

Builders' Labourers' International Union, S. P. Johnson, 2326 East Eighth Street, Los Angeles, Cal.

Carpet Workers of America, F. A. McCaskee, Kensington Avenue, Philadelphia, Pa.

Carpenters and Joiners, United Brotherhood, Frank Duffy, P.O. Box 187, Indianapolis, Ind.

Carpenters and Joiners, Amalgamated Society, Thomas Atkinson, Room 76, Bible House, New York, N.Y.

Cement Workers, American Brotherhood of, H. T. Ullner, Mechanics Bank Building, San Francisco, Cal.

Carriage and Wagon Workers, International, W. P. Mavell, 403 South Division, Buffalo, N.Y.

Carvers' (Wood) Association of North America, International, Thos. J. Lodge, 10 Carlisle Street, Roxbury, Mass.

Carworkers, International Association of, G. W. Gibson, Rooms 1209-10 Star Building, 538 Dearborn Street, Chicago, Ill.

Chainmakers, National Union of U.S. of America, C. R. Stanton, Box 13 Maxwell, Ind.

Compressed Air Workers, International Union, James G. Andrew, 210 Fifth Avenue, New York.

Curtain (Lace), Amalgamated Operators of America, Dav. L. Gould, 3141 Wendle Street, Philadelphia, Pa.

Cutting Die and Cutter Makers' International Union, William Lalor, 642 Concord Avenue, Bronx, New York.

Cigarmakers' International Union of America, George W. Perkins, Room 820 Monon Block, 320 Dearborn Street, Chicago, Ill.

Clerks' (Retail) International Protective Association, H. J. Conway, Drawer 248, Lafayette, Ind.

Coopers' International Union of North America, W. R. Deal, Bishop Building, Kansas City, Kansas.

Commercial Telegraphers' Union of America, The, Wesley Russell, 930 Monon Building, Chicago, Ill.

Cloth Hat and Cap Makers of North America, Max Zuckerman, 63 E. Fourth Street, New York, N.Y.

Conductors, Order of Railroad, W. J. Maxwell, Cedar Rapids, Iowa.

Electrical Workers, International Brotherhood of, Charles P. Ford, Pierik Buildings, Springfield, Ill.

Engineers, International Union of Steam, Jas. G. Hannahan, 6303 Harvard Avenue, Chicago, Ill.

Engineers, Locomotive Brotherhood of, W. B. Printer, 306 Society for Savings, Cleveland, Ohio.

Engineers (Stationary), National Association of, F. W. Raven, 323 Dearborn Street, Chicago, Ill.

Engineers and Machinists, Amalgamated Society of, Wm. Delahay, 74 Lafayette Street, N.Y.

Elevator Constructors, International Union, W. Young, 1952 North Nineteenth Street, Philadelphia, Pa.

Firemen, (Stationary), Int. Bro. of, C. L. Shamp, Rooms 2-4, 2502 N. Eighteenth Street, Omaha, Neb.

Freight Handlers' and Warehousemen's Union of America, J. J. Flynn, 824 W. Harrison Street, Chicago, Ill.

Fur Workers of the U.S. and Can., Int. Association, A. V. McCormack, P.O. Box 124, Toronto, Canada.

Firemen and Engineers, Locomotive, Brotherhood of, A. H. Hawley, Peoria, Ill.

Flour and Cereal Mill Employees' International Union, A. E. Kellington, 316 Corn Exchange, Minneapolis, Minn.

Fitters' (Steam and Hot Water) International Association, W. H. Davies, Merrick Building, Chicago, Ill.

Foundry Employees, International Brotherhood of, G. Bechtold, 200 South Broadway, St. Louis, Mo.

Glove Workers' International Union of America, Agnes Nestor, Bush Temple of Music, Chicago, Ill.

Granite Cutters' International Association of America, Jas. Duncan, Hancock Building, Quincy, Mass.

Gold Beaters' National Protective Union of America, Thos. Delaney, 88 Barrow Street, New York.

Grinders' and Finishers' National Union (Pocket Knife), F. A. Didsbury, 508 Brook Street, Bridgeport, Conn.

Grinders' National Union (Table Knife), J. F. Gleason, 76 Chestnut St., Bristol Conn.

Garment Workers of America, B. A. Larger, Rooms 116-117 Bible House, New York, N.Y.

Garment Workers' Union, International Ladies', John Alex. Dyche, 32 Union Sq., New York, N.Y.

Glass Workers (Window), Amalgamated, of America, Chas. Bryant, Electric Building, Cleveland, Ohio.

Glass Bottle Blowers' Association of United States and Canada, William Launer, Room 930, Witherspoon Building, Juniper and Walnut Sts., Philadelphia, Pa.

Glass Snappers' National Protective Association of America (Window), L. L. Jacklini, Kane, Pa.

Glass Workers' Amalgamated Association, International, Joseph P. McArdle, Room 204, 118 E. 28th St., New York, N.Y.

Glass Workers' (Flint) International, W. P. Clarke, 929 Ohio Building, Toledo, Ohio.

Hatters of North America (United), Martin Lawlor, 11 Waverley Place, Room 15, New York, N.Y.

Horseshoers, International Journeymen, Hubert S. Marshall, 605 Second National Bank Building, Cincinnati, Ohio.

Hod Carriers' and Building Labourers' International Union of America, A. Persian, Box 597, Albany, N.Y.

Hotel and Restaurant Employees' and Bartenders' International Alliance, Jere L. Sullivan, Commercial Tribune Building, Cincinnati, Ohio.

Iron, Steel, and Tin Workers' Amalgamated Association, M. F. Tighe, House Building, Pittsburgh, Pa.

Jewelry Workers' International Union, W. J. Betz, 573 Adam St., Buffalo, N.Y.

Knights of Labour, J. Frank O'Meara, Bliss Building, Washington, D.C.

Lathers, International Union of Wood, Wire and Metal, R. V. Brandt, 401 Superior Building, Cleveland, Ohio.

Laundry Workers' International Union, Ch. F. Bailey, 591 Second Ave., Troy., N.Y.

Lake District International Seamen's Union, 121 N. Desplaines Street, Chicago, Ill.

Leather Workers on Horse Goods United Brotherhood, J. J. Pfeiffer, 209 Postal Building, Kansas City, Mo.

Leather Workers' Amalgamated International Union of America, James J. Brennan, 223 Perry St., Lowell, Mass.

Lithographers' International P. & B. Association of U. S. and Canada, James M. O'Connor, 309 Broadway, N.Y.

Lobster Fishermen's International Protective Association, J. B. Webster, Vinal Haven, Me.

Longshoreman, International Association, J. J. Joyce, 1003 Mutual Life Building, Buffalo, N.Y.

Machine Printers and Color Mixers of U. S., C. McCrory, 81 John St., Hudson Falls, N.Y.

Machinists, International Association of, George Preston, 402 McGill Building, Washington, D.C.

Maintenance of Way Employees' International Brotherhood, S. J. Pegg, Vanol Building, St. Louis, Mo.

Moulders' International Union of North America, V. Kleiber, Box 699, Cincinnati, Ohio.

Marble Workers' International Association, S. C. Hogan, 715 Eagle Avenue, New York.

Meat Cutters' and Butchers' Workmen, International Union, Homer D. Call, Lock Box 212, Syracuse, N.Y.

Metal Polishers', Buffers', Platers' and Brassworkers' Union, C. R. Atherton, Neave Building, Cincinnati, Ohio.

Metal Workers of America (United), International Union, C. O. Sherman, 148 West Madison St., Chicago, Ill.

Mine Workers of America (United), Edwin Perry, 1106 State Life Building, Indianapolis, Ind.

Musicians, American Federation of, Owen Miller, 3535 Pine Street, Broadway and Market Streets, St. Louis, Mo.

Metal Workers, International Alliance of Amalgamated Sheet, J. E. Bray, 325 Nelson Building, Kansas City, Mo.

Pavers and Rammermen, International Union of, Ed. J. Hannah, 249 E 57th St., New York.

Paving Cutters' Union of U. S. and Canada, J. Sheret, Lock Box 27, Albion, N.Y.

Post Office Clerks, National Federation of, G. F. Pfeiffer, 187 Burleigh St., Milwaukee, Wis.

Potters, National Brotherhood of, J. T. Wood, Box 6, East Liverpool, Ohio.

Powder and High Explosive Workers of America, S. M. Stewart, Walmont, Ind.

Plasterers' International Association (Operative), T. A. Scully, Middletown, Ohio.

Painters', Decorators' and Paperhangers' Brotherhood of America, J. C. Skemp, Box 99, Lafayette, Indiana.

Paper Makers, United Brotherhood of America, J. T. Carey, 43 Benson Building, Albany, N.Y.

Patternmakers' League of North America, Jas. Wilson, Second National Bank Building, Cincinnati, Ohio.

Piano and Organ Workers' International Union of America, Chas. Dodd, 1037 Greenwood Terrace, Chicago, Ill.

Plate Printers (Steel and Copper), International Union of America, C. T. Smith, 612 F. N.W., Washington, D.C.

Plumbers', Gasfitters', Steamfitters' and Steamfitters' Helpers, United Association of United States and Canada, T. E. Burke, 401-6 Bush Temple of Music, Chicago, Ill.

Printing Pressmen, International Union, Jos. C. Orr, No. 9 Rogersville, Tenn.

Photo Engravers' Union of N. A., Louis A. Schwarz, 228 Apsley St., Philadelphia, Pa.

Quarry workers' International Union of North America, Fred. W. Suitor, Scampini Building, Barre, Vermont.

Railway Carmen of America, Brotherhood of, E. W. Weeks, 507 Hall Buildings, Kansas City, Mo.

Railway Clerks, Order of, R. E. Fisher, 310 Kansas City Life Building, Kansas City, Mo.

Railway Employees (Street and Electric), Amalgamated Association, W. D. Mahon, 601, Hodges Block, Detroit, Mich.

Railroad Telegraphers, Order of, L. W. Quick, Star Building, St. Louis, Mo.

Railroad Trainmen, Brotherhood of, A. E. King, Cleveland, Ohio.

Railroad Freight and Baggagemen, Brotherhood of America, M. Cronin, Woodworth Building, Lancaster, Pa.

Roofers (Composition), Damp and Fireproof Workers of U. S. and Canada, International Brotherhood, Dan. J. Ganley, 14 N. Oxford St., Brooklyn, N.Y.

Rubber Workers' Amalgamated Union of America, Clarence E. Akerstrom, 25 Grant Street, Cambridge, Mass.

Sawsmiths' National Union, F. E. Kingsley, 64 Baldwin Building, Indianapolis, Ind.

Seamen's International Union of America, Thomas A. Hanson, 570 West Lake St., Chicago, Ill.

Shingle Workers' International Union of America, W. H. Reid, Maynard Building, Seattle, Wash.

Shipwrights', Joiners' and Caulkers' International Union of America, Thos. Durett, 108 Marshall St., Elizabeth, N.J.

Slate and Tile Roofers' International Union of America, J. M. Gavlock, 3643 W. 47th St., Cleveland, Ohio.

Steam, Hot Water and Power Pipe Fitters and Helpers, International Association of, W. H. Davies, Room 205, Merrick Building, Chicago, Ill.

Steam Shovel and Dredgemen, International Brotherhood of, T. J. Dolan, 134 Munroe St., Chicago, Ill.

Stonecutters' (Journeymen) Association of North America, Walter M. Drayer, 322 American Central Life Building, Indianapolis, Ind.

Slate Workers, International Union of, Philip Jago, Pen Argyle, Pa.

Spinners' International Union, Urban Fleming, 188 Lyman St., Holyoke, Mass.

Steel Plate Transferrers' Association of America, Denis H. Shirman, 1301 Madison N.W., Washington, D.C.

Stage Employees' (Theatrical), International Alliance, Lee M. Hart, State Hotel, State and Harrison Street, Chicago, Ill.

Stereotypers' and Electrotypers' International Union of North America, Geo. W. Williams, 29 Globe Building, Boston, Mass.

Switchmen's Union of North America, M. R. Welch, 326 Brisbane Building, Buffalo, N.Y.

Stove Mounters' International Union, J. H. Kaefer, 1210 Jefferson Avenue, Detroit, Mich.

Tailors' (Journeymen) Union of America, E. J. Brais, Box 597, Bloomington, Ill.

Teamsters', International Brotherhood of, Thos. L. Hughes, 222 E. Michigan St., Indianapolis, Ind.

Textile Workers, United, of America, Wm. Yates, 9 Mason St., Lawrence, Mass.

Tile Layers' and Helpers' (Ceramic, Mosaic and Encaustic), International Union, James P. Reynolds, Pittsburg, Pa.

Tin Plate Workers' International Protective Association of America, Arthur Watkins, Holmes Building, W. Va.

Tip Printers' International Brotherhood, T. J. Carolan, Newark, N.J.

Tobacco Workers', International Union of, E. Lewis Evans, Room 56, American National Bank Building, 3rd and Main Streets, Louisville, Kentucky.

Typographical Union, International, J. W. Hays, Rooms 640-50, Newton-Claypool Building, Indianapolis, Ind.

Travellers' Goods and Leather Novelty Workers' International Union of America, Murt. Malone, 203 Jefferson Ave., Oshkosh, Wis.

Upholsterers' International Union of America, J. H. Hatch, 233 First Ave., New York.

Weavers' Amalgamated Association Elastic Goring, Alf. Haughton, 50 Cherry St., Brockton, Mass.

Weavers' Protective Association, America, Wire, E. E. Desmond, 27 Woodland Ave., Woodhaven, L.I., N.Y.

Woodmen and Sawmill Workers' International Brotherhood, A. Livingston, Lothrop, Mont.

Woodworkers' Amalgamated International Union of America, Jno. G. Meiler, 35-38 N. Albany Ave., Chicago, Ill.

RECENT LEGAL DECISIONS AFFECTING LABOUR IN ONTARIO

Labour Gazette, February, 1913.

Master and Servant—Negligence.

A case falling within the clause of the Workmen's Compensation for Injuries Act, which renders an employer liable for any injury to an employee through negligence of a person in the service of the employer in charge of certain operations, was recently heard in the Divisional Court, when an appeal was made from the judgment of Mr. Justice Lennox in an action tried at Port Arthur last June. It was held that the plaintiff was under the orders of the fireman in doing the work in question and the appeal was dismissed with costs.

(Nigro vs. Donati.)

Failure to Prove Negligence.

An action under the Workmen's Compensation for Injuries Act was tried at Port Arthur, before Chief Justice Falconbridge, for injury received by a workman alleged to have been due to the negligence of the defendant. The plaintiff was injured by reason of his arm coming in contact with a circular saw as he was piling wood which had been operated on by the saw. It was held that there was no evidence adduced by the plaintiff to show that it was practicable entirely to guard the saw and that the plaintiff was contradicted in most cases by independent witnesses on every material point in the case. The action was therefore dismissed.

(Maitland vs. Mills.)

Negligence—Unsuccessful Appeal.

The plaintiff, a servant of the defendants, was injured in their saw mill and brought an action against them for injuries under the Workmen's Compensation for Injuries Act. The evidence showed that it was the plaintiff's duty to assist in the operations connected with the drawing of logs from the water by an endless chain into the mill and until they reached the saw carriage. A stop board was suspended a short distance from the head of the incline plane upon which the logs were being drawn. When the logs in question were being drawn by the chain up the incline plane the plaintiff endeavoured to cant it off toward the "kicker," but failed to do so and it passed under the bounce board where it became wedged in. The plaintiff then applied a rope which stopped the chain, and tried to free the end of the log from the bounce board. Whilst thus engaged the free end of the log slipped down and came in contact with the moving saw carriage, whereby the other end swung around violently, injuring the plaintiff. The plaintiff contended that the bounce board should not have been so high as to have permitted a log to pass under it, and that its being so was a defect in the conditions of the works. In the Lower Court the jury found that the stop board was too high from the chain, thereby causing the accident, and a judgment was accordingly rendered by the District Court Judge. The defendant contended on appeal that the proper course to liberate the log was to roll it back on the log deck, that the plaintiff was doing this, but in such a careless way that one end of the log swung around and came in contact with the moving log carriage, throwing the other end against the plaintiff's leg. It was contended that the accident was the result of the plaintiff's manner of taking off the log and in no way connected with its stoppage by the stop board or caused by any defect therein. The Divisional Court upheld the findings of the Lower Court and dismissed the appeal with costs.

(Portlance vs. Milne.)

Labour Gazette, March, 1913.

Master and Servant—Injury to Servant.

An action for compensation was brought against a contractor engaged by the Canadian Pacific Railway Company for injuries suffered by the plaintiff through alleged negligence of defendants. The plaintiff was working at the end of a tunnel beside the Canadian Pacific Railway, when a mass of rock and debris fell from above where he was working, injuring him to such an extent that his right leg had to be amputated. The work was being done under a contract made between the defendants for the building of a tunnel by McCormick and the excavation of

approaches of a bridge on the Sudbury sub-division of the Canadian Pacific Railway. In defence the contractor contended that an arrangement was made whereby he was merely constituted a hiring and purchasing agent. The company, on the other hand, contend that at the time of the injury the plaintiff was in the employ of the defendant McCormick as an individual employer and not in the employ of the Canadian Pacific Railway, and that the Company had no control or supervision over the work or methods used by the contractor. The Court said that both defendants were liable to the plaintiff, regards especially being had to Section 4 of the Workmen's Compensation for Injuries Act, R.S.O., Chap. 160. Damages were assessed at $1,750 and judgment accordingly given against both defendants with costs.

(Dallontania vs. McCormick and Canadian Pacific Railway.)

Labour Gazette, April. 1913.

Fatal Accident.

An action was brought for the death of a workman who was killed while working a machine at defendant's factory, through alleged negligence of defendants. The circumstances were as follows: On the 26th of January, 1912, the belt connecting the main shaft and counter-shaft parted and fell to the basement. Falconer went to the basement, procured the belt, and took it to Werlich, the millwright having general charge of the machinery in the mill, for the purpose of having the belt repaired and replaced. Werlich went to the machine and took the cover off the box or casing which enclosed the counter-shaft; the belt could not be replaced without his doing so. He then placed the belt over the counter-shaft and down through the openings and went to the basement to lace it. Falconer assisted him in uncovering the counter-shaft and in passing the belt through. When the belt was laced, Werlich came upstairs again, placed the belt upon the loose pulley, and went below again in order to put the belt upon the revolving pulley on the main shaft. Werlich states that at this time he told Falconer to stand clear, as it was his intention to start he belt. The jury found that no such statement was made. When Werlich reached the basement he immediately placed the belt upon the pulley; and there was no eye-witness of what next happened. By some means something was violently thrown and struck Falconer upon the breast, breaking three ribs and driving them into his heart, instantly killing him. The theory put forward by the defendants was that Falconer had taken a piece of wood—produced at the trial—with the view of holding the belt upon the free pulley while it was being placed on the moving pulley below, and that when the belt commenced to move this piece of wood was jerked from his hand and thrown against him with violence. The piece of wood produced was found immediately after the accident, broken as if it had received some severe impact, and the sides of the box were broken where they had been hit by some such object as the stick produced. The jury held that the negligence existed on the part of the defendants in that the shifter was insufficiently locked and that it allowed the belt to travel on to the fixed pulley, thereby putting the whole of the counter-shaft in motion at high speed; that the engine should have been slowed down during the operation, and that Werlich was negligent in leaving the cover off the counter-shaft while the shafting was in motion and putting the belt on the wrong side of the drive-wheel. Contributory negligence was negatived. The defendants' counsel pressed strenuously for non-suit, upon the ground that the only fair in-

ference from the evidence was that the accident was occasioned by Falconer's own conduct in endeavouring to hold the belt in place upon the free pulley while it was being replaced by Werlich upon the moving pulley below. In rendering judgment, Mr. Justice Middleton held that the jury's findings were warranted by the evidence, though their theory of the accident was not, and entered judgment for the plaintiff for $1,650 and costs. During his award the judge said, in part: "For the benefit of any court dealing with this matter, I may say that the impression made upon my mind as to what really happened was this: Falconer probably took the stick produced and held the belt upon the free pulley. As Werlich had passed the belt down on the wrong side of the moving pulley below as soon as he placed it upon the moving pulley it would immediately pass over the wooden pulley to rotate, instead of remaining stationary. This wooden pulley then struck the stick, jerked it out of Falconer's hands, threw it violently upon the box, and it then rebounded and struck Falconer. Falconer would be standing in such a position that the stick, when jerked from his hands, would be thrown away, and would only reach him upon a rebound; and the break in the walls of the cover indicate that there had been such a rebound. Judgment will therefore go for the amount awarded, $1,650 (apportioned $500 to the infant son, which amount must be paid into court, and $1,150 to the widow), and costs."

(Falconer v. Jones.)

Master and Servant—Negligence.

During February a case was heard at Toronto wherein an action was brought by the widow of a workman for damages for the death of her husband, who was drowned during January, 1911. The deceased was employed by the Canadian General Electric Company, as foreman in charge of the Nassau Power House, beside the Otonabee. He had gone out on the ice which had formed on and over the apron of a sluiceway, for carrying off water, ice, and debris, leading through the wing-dam from the fore-bay and discharging into the Otonabee River. When about four or six feet from the outer end and while cutting away the ice with a short axe so as to clear the apron, he fell into the river, and notwithstanding the efforts of his companion to reach him with his ice axe, he was carried around by a swift eddy and under the ice near the dam and drowned. His body was not recovered for three months afterwards. The questions raised by the defence were: (1) That what deceased was doing was not his work, as he had a helper specially employed to clear away ice, and had the right to call upon others nearby for that purpose; (2) That he knew of and voluntarily incurred the risk and that the defendants had provided ropes, the use of which would have prevented the fatal result of a fall into the river; (3) That he was in a specially dangerous place at the moment of the accident which he need not have occupied; (4) That the clearing away of the ice could have been done by getting down into the sluiceway and working from there instead of on top of the ice. Several cases were referred to by Mr. Justice Hodgins, who held that a foreman in such a position as the deceased at the time of his death was not travelling outside his duty by doing or assisting in doing work which those under him may be employed to do, if the work is necessary. In the present case it was held that the work in question was urgent and required speedy action, and that what the deceased did was done entirely for the benefit of the defendant company for the proper operation of the works. It was held that the defendant failed to show contributory negligence on the part of the deceased workman, and judgment was given for the plaintiff for $2,500 and costs.

(Fairweather v. Canadian General Electric Co.)

Workmen's Compensation Act.

In the *Labour Gazette* for February, 1912, a report is given on an action brought by Catharine Darke for damages under the Workmen's Compensation Act, the Ontario Factories Act, and the Common Law, for the death of her husband while in the employment of the Canadian General Electric Company, the action being dismissed without costs by Chief Justice Mulock. In the May, 1912, issue of the *Labour Gazette,* a report was given of the reversal of the foregoing judgment in the Divisional Court, to which an appeal was made and which entered judgment for plaintiff for $1,800 damages with costs of trial and appeal. An unsuccessful repeal was recently made against this decision also, the appeal being dismissed with costs.

(Darke v. Canadian General Electric Company.)

Non-Payment of Wages.

A case of non-payment of wages was recently decided at Dundas, when Thomas Meyers summoned Messrs. Webb Bros., of Lancaster, for non-payment of wages to the amount of $25.60, the result being judgment for plaintiff for $18 and costs. The plaintiff was engaged at $18 per month, but left without giving notice about the middle of the second month. The magistrate ruled that he was not entitled to any pay for the second month, but gave judgment for the one full month he worked. It was explained by the Court that a man hired by the year on monthly payment was under no legal obligation to remain longer than the end of any month, and that the only way the man could be held for a full year was by engagement at a stated amount for the year and not on a monthly basis, although advances could be made monthly on the yearly wage.

(Meyers v. Webb Brothers.)

Labour Gazette, May, 1913.

Convictions of Striking Miners Quashed.

Important decisions were rendered by Judge Kehoe recently on appeal from the convictions of Magistrate Torrance under the Industrial Disputes Investigations Act. It will be remembered that an action was taken against some of the employees of the Hollinger Gold Mines, Ltd., for going out on strike without notice. Three men were prosecuted for inciting, two of whom were fined $500 each and costs or three months in jail, while the other was fined $50 or sixty days in jail. The men refused to pay the fines and went to jail, but were released as a result of application to the Minister of Labour and the Minister of Justice after having served twenty days of their sentences. Appeals were made, and the three cases were heard before Judge Kehoe, in Pocupine, on March 26. The result was a reversal of the previous decision in the case of two of the men, while the appeal was maintained in the case of the other.

Damages for Injuries.

At the Ottawa Spring Assizes, damages to the amount of $500 were awarded to a brakeman of the Grand Trunk Railway for injuries received while in the employ of the Company last October. The plaintiff, according to his own evidence, was working on a mixed train near Golden Lake, when he sustained the injury which afterwards meant the loss of his middle finger on his left hand and the temporary disablement of the hand and arm. One of his duties as brakeman on

this train was to couple up and give signals. On this particular day his train had to couple up and empty a Grand Trunk Pacific car which was lying on a siding at Golden Lake. His train backed on to the siding, but when it was still within a distance of three car lengths he gave the signal to stop while he examined the coupler on the empty car, to see if it was working all right. When he was doing this the train backed down on him, and before he had time to pull his hand away the two couplers met, resulting in his painful injury. The fireman who was receiving the signals that day told the Court that he had not received the signal to stop, but the brakemen persisted that he did give the signal, and so the case hinged on that particular point. In the evidence submitted, the jury brought in a verdict that the accident was due to a misunderstanding of signals between the fireman and the brakeman, and that the latter was entitled to $500 damages.

(Leggatt v. Grand Trunk Railway Company.)

Labour Gazette, June, 1913.

Sunday Observance on Electric Railway.

In the Court of Appeal an appeal against the decision of Mr. Justice Boyd concerning the rights of the London and Lake Erie Transportation Company to operate cars on Sunday was sustained. Last year the Company was sued by Mr. Wm. Kerley, of St. Thomas, for violating the Ontario Railway Act by operating cars on Sunday and judgment was given in his favour. As a result of this, the cars ceased running on Sunday. The plaintiff has since died. The Court of Appeal held that as the Company was chartered not only to operate the local line but to navigate to Cleveland and other points, it was clearly for the general advantage of Canada and so was under the exclusive control of the Dominion. For this reason the Ontario Railway Act, alleged infringement of which was the cause of the original action, could not apply.

(Kerley v. London and Lake Erie Railway and Transportation Co.)

Master and Servant—Negligence.

An action for damages for personal injuries sustained by the plaintiff in the defendants' employ, a saw which he was operating taking off his fingers, was tried at Hamilton, March 31, 1913. Hon. Mr. Justice Middleton delivered the following judgment: "With every sympathy for the unfortunate plaintiff, I think that, notwithstanding the finding of the jury, I must dismiss the action." Costs will probably not be asked.

(Wyers v. Winlow.)

Negligence of Fellow Servant.

In an action for damages for injuries sustained by the plaintiff while in the defendants' services, tried at Hamilton, April 2, 1913, Mr. Justice Middleton delivered the following judgment: "The jury found that there was 'negligence on the part of the defendants through the defendants' employee not seeing plaintiff was on the other car before the cars parted; which means, that in the view of the jury it was incumbent upon Bryant, the brakeman upon the ground —whose duty it was to give the signals for the motion of the engine—to have seen that the plaintiff reached the rear car before the signal was given which caused the engine to stop and permitted the cars to part. Allan v. Grand Trunk Railway Company, 23 O.W.N. 51, justify the finding that Bryant was in charge or control of the engine within the meaning of subsection 3 of the Workmen's

Compensation Act; and I think that the jury might well come to the conclusion at which they have arrived, that Bryant, who knew that it was the plaintiff's duty to go upon the rear car, ought to have seen that the plaintiff was safely there before giving the signal in question. At the trial, counsel for the defendants did not desire the question of contributary negligence to be submitted to the jury; so that in this view the plaintiff is entitled to recover $1,500, the amount awarded by the jury."

(Simmerson v. Grand Trunk Railway Company.)

Labour Gazette, July, 1913.

Fatal Accident.

In the *Labour Gazette* for April, 1913, reference was made to a successful action for damages brought by the widow of an employee who was killed while assisting the foreman to replace a belt upon a pulley. Judgment was entered for $1,650 damages, and an appeal was made by the defendants, who claimed that the accident was caused by the negligence of the deceased in interfering with the belt in question in disobedience of the orders of the millwright. The appeal was heard in the first Appellate Division of the Supreme Court of Ontario, the Court dismissing it with costs.

(Falconer v. Jones.)

Negligence of Superintendent.

An action was brought against the Smith's Falls Electric Power Company by the widow and infant child of a workman in the employ of the defendants who was killed while working for them on May 20, 1912, owing, it was alleged, to their negligence. The deceased was employed, with the defendants' superintendent and another workman, in moving a heavy pulley from the power-house into a building adjoining, where the defendants were establishing a steam plant auxiliary to their water power system. It had to be moved up an incline through a narrow space between the end of a shaft and the wall of the power-house. Ordinarily during the daytime the shaft was not in motion. On the occasion in question, however, it had become necessary to connect it with one of the turbines, and it was rotating at a speed of 160 revolutions a minute. After the fly-wheel had been moved up the incline, the deceased stepped back towards the projecting shaft, which caught part of his clothing and caused injuries of which the man died a few hours later. Mr. Justice Latchford expressed the opinion that although the power-house was not a factory as defined by the Factories' Act, the defendants were liable at common law as well as under the Workmen's Compensation for Injuries Act. It was, he said, their duty to take reasonable care that the safety of their servants should not be imperilled as it was by a thing so dangerous as the revolving shaft, the end of which might have been securely guarded. He held, therefore, that there was in use by the defendants a defective and negligent system which caused the death of the deceased workman, and that there was no contributory negligence on the part of the latter. Judgment was given for compensation to the amount of $4,000 and costs, the compensation to be apportioned two-thirds to the widow and one-third to the child.

(Hicks v. Smith's Falls Electric Power Company.)

Negligence—Judgment Maintained.

An appeal was heard in the Ontario Supreme Court from a judgment rendered in favour of the plaintiff upon the findings of a jury in an action for personal injuries caused by reason of the defendant's alleged negligence. The defendant was a sub-contractor for the Canadian Pacific Railway. The plaintiff was in the defendant's employ, and at the time of the accident was operating the jack which supported a steam shovel when hoisting the load. The steam shovel rested on wheels on a side track and changed its position from time to time on the rails, in order to carry on its work of excavation in connection with the railway. It became necessary, when operating, to give support by means of the jack, in order to meet and counter-balance the extra weight imposed upon one-side of the steam shovel. For this purpose it was the plaintiff's duty to operate the jack, and while in the act of doing so it is claimed that the engineer in charge of the engine operating the steam-shovel started the machinery without warning the plaintiff, whereby the hoist swung round and knocked the plaintiff against the cogs of the steam-shovel, which, catching his coat, drew his left arm therein, injuring and crushing the same and rendering it necessary to have it amputated. The evidence showed that the accident was caused by negligence on the part of the defendant in not having the cogs sufficiently guarded and by the engineer's negligence in not giving sufficient warning. Upon these findings judgment was entered for $1,500 damages and costs, against which the defendant appealed. The plaintiff's counsel conceded that there was no evidence to support the finding in respect of the cogs not being sufficiently guarded, but submitted that the plaintiff was entitled to retain the judgment upon the other findings. The only question that remained was as to whether or not the case fell within sec. 3, subsection 5, of the Workmen's Compensation for Injuries Act, the argument being that the engineer was not a person who had charge or control of a locomotive engine or machine or train upon a railway. The case of Murphy v. Wilson (1883) 52 L.J.Q.B. 524, was cited, in which it was held that "a steam crane fixed on a trolley and propelled by steam along a set of rails when it is desired to move it, is not a 'locomotive engine' within the Employers' Liability Act (1880), sec. 1, subsection 5, but as pointed out in McLaughlin v. Ontario Iron and Steel Company, 20 O.L.R. 335, the introduction of the word 'machine' had very much widened the scope of the Act, which distinguished Murphy v. Wilson from the present case, as seen in Dunlop v. Canada Foundry Company, 4 O.W.N. 791, at p. 796, where it was held that a hoist was a machine or engine, and the rails upon which it ran a tramway within the meaning of the Act." Mr. Justice Clute, in closing said: "I am of opinion that the plaintiff is entitled to retain his judgment upon the findings of the jury, and that this appeal should be dismissed with costs."

(Dicarllo v. McLean.)

Labour Gazette, August, 1913.

Negligence of Fellow Servant.

In the Court of Appeal an appeal against the judgment of Mr. Justice Middleton awarding damages for injuries to a brakeman of the Grand Trunk Railway was dismissed with costs. From the evidence submitted in the lower courts it appears that the injured man was hurt by falling off a car when stepping from one to another, when they were being shunted. Another brakeman, one Bryant, was on the ground, whose duty it was to signal the engineer. It was pointed

out by Hon. Sir William Meredith that while there was no direct evidence that Bryant has given the signal which caused the cars to part, there was ample evidence to justify the jury in drawing the inference that it was he who did so, and as this inference was drawn they were warranted in finding that Bryant was guilty of negligence in giving the signal without seeing that the respondent had reached the rear car.

(Simmerson v. Grand Trunk Railway Company.)

Injury to Servant—Negligence not Proven.

A hostler, who was injured by reason of a horse stepping on his leg and breaking it, appealed against the decision of Hon. Mr. Justice Britton, who dismissed his action for damages. It was held by the Court of Appeal that assuming the defendant had the superintendence of the stable, the injury to the plaintiff was not caused by any negligence on his part whilst in the exercise of such superintendence. It was claimed on behalf of the plaintiff that the defendant had turned the horse loose in the stall to enable him to go to the water, but the Court held that this was a common every day practice and was no evidence of negligence. The appeal was therefore dismissed.

(Eagle v. Meade.)

Overcharging Immigrant.

Because he charged an immigrant more than the actual cost of transporation, contrary to the Immigration Act, information was laid against William Saposnikoff, of the National Employment Agency, Sudbury, by Immigration Inspector Reynolds, of Ottawa, before Police Magistrate Brodie on Saturday. Saposnikoff pleaded guilty and was fined the maximum penalty, $100 and costs, or three months in jail. He paid the fine. Late in June Foley Bros. and Northern Construction Company gave Saposnikoff a written order for 195 men to be employed at construction work at Hobon, Ont., and other centres. Armed with the order Saposnikoff proceeded to Montreal and was successful, with the assistance of three employment agents, in that city, in securing the help required. Having to purchase more than one hundred tickets Saposnikoff was given a reduced rate of one cent and a half per mile by the Canadian Pacific Railway, instead of the usual charge of three cents. Under agreement with employment agents, the cost of transportation and license fee of one dollar is advanced by the firm, the amount being deducted from the wages of the immigrant. When Saposnikoff rendered account to Foley Bros. it was discovered that he had charged each immigrant the full amount of three cents per mile. Two of the foreigners overcharged then laid complaint to the Immigration authorities at Ottawa, who investigated, and the conviction followed.

Labour Gazette, November, 1913.

Wages Withheld.

In the first Division Court, on October 15, an action was brought by the Ottawa Construction Company working on the revetment wall at Hamilton against a decision by Magistrate Jeffs, awarding two employees their wages. The company claimed that the men were partly responsible for the loss of a life raft and withheld $10 from the pay of the two men. Judgment was given in favour of the two men in the Police Court, and on the appeal being heard by Judge Monck the former judgment was maintained.

(Jones and Crosby v. Ottawa Construction Company.)

Damages for Injuries.

An action for damages for injuries received by the plaintiff while in the employ of the defendant company, was heard by Mr. Justice Latchford at Haileybury. The plaintiff, while engaged in running a machine, drilled into a hole in which some powder remained, and the explosion which followed caused serious injuries, including the loss of his eyes. The evidence showed that on the day previous to the accident, thirteen shots had been fired into the round. When the plaintiff examined the face he reported to the mine captain that eleven holes needed recharging as the round had not been a successful one. The rules of the mine had been that all holes where the bottom could not be seen should be shot, and when a new hole was started it must be six inches from an old hole. The mine captain did not inspect the work after the report was made to him, and there being no shift boss employed on this occasion, the plaintiff asked another machine man what he should do, and was told to suit himself, whereupon he set his machine up and began drilling six inches from a hole which had been missed. After drilling about a foot the explosion occurred, causing the death of a fellow workman and injuries to the plaintiff as mentioned above. The jury found the defendant company guilty of negligence in the fact that the mine captain failed to inspect the work after the report made to him, and awarded the plaintiff $3,250 and costs. (*Dementitch v. North Dome Mining Company.*)

At the first High Court sittings in the District of Temiskaming, cases were heard by Mr. Justice Latchford, in which the plaintiffs claimed damages from the defendant company for injuries suffered through an explosion which occurred in the company's powder factory. On the day of the accident a fire broke out in the grinding room of the factory, which spread to the packing room where about one hundred cases of the finished product was stored, causing an explosion which killed six persons and seriously injured many others. The jury found the company guilty of negligence in not having properly isolated the crushing room from the mixing and finishing room, in not having confined the dangerous operation of crushing chlorate of sodium within properly constructed fireproof walls, and in permitting an unnecessarily large quantity of finished product to be stored in the finishing room where employees were engaged. In one case the widow of a man who was killed by the explosion was awarded $3,300 damages, while her son received $400, which was paid into court and left for him until he attains the age of twenty-one. In another case counsel for defence concurred with the counsel for the plaintiff regarding $390 for lost time and $300 for possible future loss of time, but held that an additional $500 for pain was excessive. Judgment was accordingly given for $700 and costs, the amount for "pain and suffering" being eliminated. The third case was that in which the plaintiff claimed damages for injuries which included the bursting of his right ear drum. He was awarded $600 damages.

(McLaughlin v. Energite Explosives Co.; Noel v. Energite Explosives Co.; Manaskyvoski v. Energite Explosives Co.)

Conviction under Alien Labour Law.

Judgment in the first trial recorded in the city of Sault Ste. Marie under the Alien Labour Act was rendered on November 24, when a fine of $200 and costs was imposed on the Gamble-Robinson Company for violation of the Act. The trial arose out of the dismissal of Mr. J. A. Cavin by the defendant company and the replacing of him by Karl J. Saunders of Minneapolis.

Damages for Death of Miner—Appeal Dismissed.

The appeal by the Cordova Mines Company from the judgment of Mr. Justice Latchford, in the case of Pressick v. Cordova Mines Company, was dismissed in the Appellate Division of the High Court before Mr. Justice Muloch, Mr. Justice Riddell, Mr. Justice Sutherland and Mr. Justice Leitch. The appeal concerned the action and subsequent judgment obtained on May 23, 1913, by Lily Pressick, widow of Arthur Pressick, to recover $10,000 damages for his death on May 31, 1912, caused by falling down a winze or opening in defendents' mine, alleged to have been caused by negligence of defendents. At the trial which took place in Peterborough at the Spring Assizes, judgment was awarded plaintiff for $1,750 and costs. In the Appellate Court two of the judges were of the opinion that the appeal should be dismissed and two held that it should be allowed and the action dismissed with costs if demanded. The appeal was dismissed with costs.

(Pressick v. Cordova Mines Company.)

Fatal Accident's Compensation.

On April 1, Charles Cave, a brakeman on the Grand Trunk Railway, was riding on the side of a box car when he struck a lumber wagon which had been left close to the track, and received injuries which resulted in his death. An open verdict was returned by the coroner's jury. An action was commenced by the widow of the deceased man and a settlement was effected out of court. The widow received $2,900 and $250 insurance, besides all costs in connection with the suit.

(Cave v. Grand Trunk Railway.)

Master and Servant—Compensation.

Another settlement effected out of court resulted in the widow of a former employee of the Pittsburg Coal Company of Sandwich receiving the sum of $2,650 as a result of the death of her husband while in the employ of the Company. In August the deceased man was working on the platform on the coal shoot at the Company's docks when a large beam broke, and, swinging round, knocked him off the platform. He was thrown heavily to the ground and was killed.

(Bradt v. Pittsburg Coal Company.)

Violation of Railway Act.

A brakeman and conductor were fined $100 each at Hamilton for violation of the Railway Act in neglecting to close a switch after they had taken the siding. The neglect was discovered just in time to prevent a serious accident.

Accident—Death of Workman.

An action before a jury was heard at Haileybury on October 31 when Mr. Justice Latchford dismissed a claim against the Nipissing Mining Company for damages on account of the death of a workman. The deceased, McGoff, met his death when a staging on which he was working collapsed, throwing him a distance of thirty-five feet and inflicting injuries from which he died twelve hours later. The plaintiff's counsel endeavoured to prove that the hooks used on the staging were faulty, but it was shown that the open hooks had been used for some six years without an accident having occurred. The jury in its findings attached no negligence to the company, but it also found that the deceased was in no way responsible for his own death. No damages were brought in, but on a request of the presiding Judge the jury assessed damages at $300 for the father of the deceased and $500 for the mother.

(J. McGoff v. Nipissing Mining Company.)

TRADE DISPUTES IN ONTARIO

Labour Gazette, February, 1913.

Strike of Machinists at Ottawa.

About forty machinists in the employ of the Ottawa Car Company struck work on January 2nd following a refusal of the company to grant a nine-hour day. The men resumed on January —, a Board of Conciliation and Investigation having been applied for and granted.

Strike of Photo-Engravers at Toronto.

A strike of photo-engravers took place at Toronto on January 27th, the cause of the dispute being a demand by the union for a new agreement with higher wages to take the place of the previous agreement which expired during last June. It was reported that the firms affected generally agreed to a higher scale of wages, but desired to establish the open shop principle and refused to negotiate with the union. About sixty-five men were involved in this dispute.

Strike of Cigar Makers at London.

A strike involving fifty men engaged in the cigar manufacturing industry occurred at London on January 27th. The employees demanded that all applications for work should be sent to a committee representing them for decision as to whether applicants should be employed or not.

Labour Gazette, March, 1913.

Strike of Plumbers at St. Catharines.

Plumbers at St. Catharines, to the number of forty, struck work on February 1 on account of the refusal of the employing firms to grant an increase of 10 cents an hour.

Strike of Machinists, Blacksmiths, Boilermakers, Etc., at Ottawa.

Ninety-six men employed by the International Marine Signal Company, at Ottawa, ceased work on February 13. The dispute grew out of the employees' demand that a nine-hour day should take the place of a ten-hour day in force at the Company's shop, also that the daily wage for nine hours should remain the same as was being paid for ten hours, and that the Company should reinstate certain employees who were said to have been dismissed for their activity in trade union matters. Conferences were arranged through the Department of Labour between the management and the Company and the workmen concerned. The final conference was held with the Board of Directors of the Company on February 20, and resulted in a settlement of the dispute, the men returning to work on February 24.

Strike of Coremakers at Hamilton.

A strike of coremakers occurred at Hamilton on February 27, when fifty employees of the Canadian Westinghouse Company ceased work. According to the statement of the representative of the Company the dispute arose from the discharge of two employees who were principally concerned in an assault upon a foreigner who was not a member of the union. No termination of this dispute occurred during the month.

Strike of Electrical Workers at Hamilton.

Electrical workers in the employ of the Canadian Westinghouse Company ceased work on February 17. The cause of the dispute was the objection raised by the men to the installation of time checks. Fourteen men in all went on strike and were still out at the end of the month.

Strike of Garment Workers at Toronto.

Forty garment workers in the employ of a contractor for the firm of Messrs. Randall & Johnson struck work on February 10, claiming that union hands were unfairly discriminated against by the contractor in question. The strike ended on February 15 by the firm undertaking that there should be no discrimination allowed against union hands.

Strike of Twine and Cordage Workers at Doon.

A strike affecting ninety-nine employees of the Doon Twines Co., Limited, occurred on February 20, following a demand for an advance in wages of ten cents per day for every person employed in the mill. A meeting of the directors was held on February 24, and after hearing the demand of the strikers it was intimated to them that no advance would be made. The mill was re-opened on February 25, and the majority of the workpeople resumed operations.

Strike of Theatrical Workers at Peterborough.

A lockout occurred at Peterborough among theatrical workers in the employ of Messrs. J. J. Turner and Sons on account of non-recognition of the union by the employers. Fourteen employees were involved in this dispute. The Company informed the Department that the places of the men were filled.

Labour Gazette, April, 1913.

Strike of Moulders and Coremakers at Hamilton.

Two hundred and fifty moulders and coremakers in the employ of three Hamilton firm struck work on March 26. The union demanded an increase of 25 cents per day for moulders and 50 cents per day for coremakers, with a 10 per cent. increase in piece work.

Strike of Garment Workers at Toronto.

A strike of garment workers occurred at Toronto on March 18, following demands by the employees for an increase in wages, time and a half for overtime, and better working conditions. Six firms in all were directly affected by this dispute, three of which conceded the demands of the strikers after a period of three days. At the end of five days another firm granted the strikers' demands, and the employees of two firms only were on strike at the end of the month. About twenty-seven firms and 2,000 employees were indirectly affected by this dispute.

Labour Gazette, May, 1913.

Painters and Paperhangers, Hamilton.

On April 1 painters at Hamilton struck work to enforce a demand for an increase of two and a half cents. per hour. Although no definite settlement had been received at the end of the month, it was reported that practically all of the men had found work with other employers at the increased rate of wages.

Iron Moulders, Owen Sound.

A lockout of seventeen moulders in the employ of Messrs. Kennedy & Son occurred at Owen Sound on April 1. The circumstances leading up to the dispute were as follows: During February the men, only three of whom were members of the local union, asked the firm for a 10 per cent. increase in wages, which was refused and an offer made of 10 cents per day. The men then joined the moulders' union and sent in a committee of two men with a written statement asking for more money on account of the increased cost of living. The firm discharged the two committeemen and posted notices that all members of the union must leave their employ, the lockout being effective on April 4. The dispute practically ended on April 14, when the majority of the men severed their connection with the union and resumed work, an increase of wages being granted.

Linemen, Hamilton.

Twenty-five linemen employed by the Hydro Department of the City of Hamilton went on strike on April 1 for an increase of five cents per hour in wages. After being out seven days the men returned to work at an increase of four cents per hour. Another strike of linemen occurred in the same city on April 21, when ten men in the employ of the Cataract Power Company ceased work on account of the Company's refusal to grant an increase in wages. No termination of this dispute was reported at the end of the month.

Wire Drawers, Hamilton.

A strike of wire-drawers in the employ of the Frost Wire Fence Company at Hamilton occurred on April 15. The representative of the men in a communication to the Department, under date of April 27, stated that the wire-drawers were requested about eighteen months ago to accept a reduction in wages owing to competition in production, and that this reduction was made under the agreement that the old scale should be reverted to in a short time. The refusal of the Company to grant the increased wages was the cause of the strike. The men's representative also stated that the men were still on strike at the end of the month, with no prospect of settlement. A communication from the Company, however, informed the Department that the strikers places had been filled.

Garment Workers, Toronto.

A strike of garment workers occurred at Toronto on April 15, the employees alleging discrimination against members of the union. About 200 employees were involved in this dispute, of which no settlement was reported at the end of the month.

Garment Workers, Hamilton.

On April 15, 2,000 garment workers in the employ of various clothing firms in Hamilton ceased work on account of the refusal of the employers to grant an increase in wages. Two hundred cutters and trimmers were laid off two days later and joined the strikers. On April 28 the strikers returned to work, pending a settlement by a committee of employers and employees within ten days.

Boot and Shoe Workers, Toronto.

A strike of seventy-five boot and shoe workers in the employ of the J. W. Hewetson Company occurred at Toronto on April 25 on account of the refusal

of the Company to grant an increase of wages. The dispute was left unsettled at the end of the month, but it is understood that a satisfactory arrangement was made early in May.

Teamsters, Belleville.

Fourteen teamsters employed by the City of Belleville struck work on April 13 for an increase of 50 cents per day, the present rate being $3.50. The City Council on April 14 passed a resolution fixing wages of teamsters at $4.00 per day, but stipulated that none of the strikers should be re-engaged.

Teamsters, Toronto.

On April 16 a strike of teamsters occurred at Toronto involving about 400 employees who were working for four different firms in the city. The cause of the dispute was a demand on the part of the strikers for an increase of $5 per month. The original rates ranged from $44 to $50 per month, and the men demanded as a minimum $55 per month for those who had been in the service more than six months. The companies refused, making an offer of $53 per month, which the men refused to accept. A settlement was effected on April 21 by means of negotiations between the parties concerned, the terms of which provided for a part of the increase demanded by the men.

Labour Gazette, June, 1913.

Plasterers' Labourers, Toronto.

A strike of 300 plasterers' labourers occurred at Toronto on May 21, the men asking for an increase of six cents per hour. After being out for about three weeks the strikers accepted an offer of an increase of one cent. per hour, the question of a further increase to be referred to an arbitration committee of two representatives to be appointed from each side.

Structural Iron Workers, Toronto.

Structural iron workers, to the number of 250, struck work at Toronto on May 1, demanding an increase in wages of ten cents per hour.

Iron Moulders, St. Catharines.

On May 1 a strike occurred among employees of the McKinnon-Dash Company at St. Catharines, the cause of the dispute being a demand for payment every week instead of every two weeks as previously. The strike was settled on May 2 and the men returned to work on May 5 under an agreement by which they will receive payment every Saturday, commencing May 17.

Iron Moulders, Guelph.

Twenty-nine employees in two foundries were affected by a dispute which commenced at Guelph on May 19. The cause of the dispute was a demand made by the men for an increased rate of wages.

Iron Moulders, Galt.

Iron moulders at Galt struck work during May following the carrying out of an agreement with the employees of the Canadian Westinghouse Company of Hamilton. Three firms and sixty employees were affected by this dispute.

Electrical Workers, Toronto.

A strike of electrical workers in the employ of the Toronto Street Railway and the Toronto Electric Light Companies occurred on May 8, the men demanding recognition of the union, increased wages, shorter hours, and other changes. The dispute terminated on May 23, when an offer of 37½ cents per hour, representing a compromised scale, was accepted by the men. The strikers, numbering about 250, returned to work on May 26.

Electrical Workers, Toronto.

Another strike affecting electrical workers occurred at Toronto, the men in this case being employes of the Hydro-Electric Commission. A committee representing the men asked the Toronto Hydro-Electric Commission to grant them an increase in wages. The Commission offered to advance the wages from twenty-seven, thirty, and thirty-three cents respectively for the different classes of linemen to thirty-two, thirty-five, and thirty-eight cents respectively, but the men refused to accept these terms and struck work on May 29 for a still further increase of three cents per hour. Negotiations between the parties were held on the days following, the men returning to work at midnight on May 31, on the understanding that the dispute should be referred to arbitration. Mr. Gerald H. Brown, Assistant Deputy Minister of the Department of Labour, met both sides concerned in this dispute on May 31, and lent the good offices of the Department in promoting the speedy termination of the strike.

Electrical Workers, Hamilton.

On May 1 seventy-five inside electrical men and fifty helpers went on strike at Hamilton for an increase of seven and a half cents per hour. After being out eight days a compromise was affected by which the journeymen received an increase of five cents per hour, and helpers an increase of three cents per hour.

Electrical Workers, Brantford.

A strike of employees of the Crown Electric Company occurred on May 30 at Brantford, the cause of the dispute being the refusal of the Company to accede to a request of the men for a weekly payment of wages. Fifty-eight employees were thrown out of work as a result of it. No settlement of the strike was reported during May, but the Department was informed that the men returned to work early in June.

Cabinet Makers, Toronto.

About four hundred cabinet makers and mill hands struck work on May 1 at Toronto, demanding an increase of five cents per hour.

Street Railway Employees, Port Arthur.

On May 10, motormen and conductors in the employ of the Port Arthur and Fort William Street Railway Company stopped work on account of the refusal of the Company to discuss a proposal regarding the reinstatement of discharged employees, and also a request for increased pay. A few cars were running on May 10 and 11, but riots took place which resulted in the death of one man, and on May 12 no cars were operated. On May 13 a partial service was commenced and continued up to the end of the month, though there was no definite settlement of the dispute at that time.

Glass Workers, Toronto.

A strike of twenty-six glass workers occurred at Toronto May 1, the cause of the dispute being a demand for an increase in wages of six cents per hour. There was no definite settlement of this dispute reported to the Department, but it was understood that most of the men returned to work at a higher rate of wages.

Labour Gazette, July, 1913.

Carpenters, Toronto.

A strike of carpenters occurred at Toronto on June 2, on account of the refusal of the contractors to grant an increase in wages of five cents per hour. About 3,000 men were affected. On June 7 over 200 employers had agreed to pay the higher rate of wages, and the strikers at a mass meeting decided to call the strike off.

Carpenters, Welland.

On June 2, about fifty carpenters in the employ of the H. C. Hitch & Co., of Welland, struck work on account of the refusal of the employers to sign an agreement providing for recognition of the union. On June 10 about twelve of the strikers returned to work under previously existing conditions, and of the remainder some left the locality, while others found employment with other contractors.

Iron Moulders, St. Catharines.

On June 28 a strike of iron moulders in the employ of two firms occurred at St. Catharines, the men making a demand for higher wages and shorter hours. About thirty-four men were affected by this dispute.

Boilermakers, Toronto.

Boilermakers to the number of 250 struck work at Toronto on June 4, demanding a reduction of working hours from ten to nine per day and an increase in wages of ten per cent. A compromise was effected with most of the firms involved, and the men with a few exceptions were back at work at the end of the month.

Horseshoers, Toronto.

Horseshoers at Toronto, to the number of ninety, struck work on June 16 for an increase in wages. Most of the employers conceded the demand of the men, and only a few men were out at the end of the month.

Labour Gazette, August, 1913.

Picture Frame Makers, Toronto.

Forty picture frame makers at Toronto went on strike on July 16, following a demand for higher wages.

Labour Gazette, September, 1913

Strike of Plasterers at Ottawa,

A strike of plasterers occurred at Ottawa on August 1, the cause of the dispute being a demand on the part of the men for an increase in wages from forty-five cents to fifty cents per hour, with a reduction in working hours from nine to

eight hours per day. Plasterers' labourers also went on strike, demanding an increase from thirty cents to thirty-five cents per hour. About 115 men in all were affected. At the end of the month it was reported to the Department that all the plasterers who belonged to the union were working for contractors who had agreed to pay the advanced rate, though the strike was not officially declared off.

Strike of Plumbers at Welland.

A strike occurred at Welland on August 1, on account of the refusal on the part of the contractors to accede to a demand for an increase from thirty-five cents to forty cents per hour. About sixteen men were involved in this dispute. It was understood that industrial conditions were not affected at the end of the month as a result of the dispute, although it had not been formally settled. The employers were reported to have agreed to the wage scale proposed by the union, and the men were working, leaving the matter of recognition of the union unsettled.

Labour Gazette, October, 1913.

Strike of Labourers at Hamilton.

A strike of labourers occurred at Hamilton on September 18. The men were employed by the G. M. Guest Company, which was awarded a contract for the underground conduit. It was understood that when the contract for the work was awarded Hamilton labourers were to be employed as far as possible at the current rate of wages, twenty-two to twenty-five cents per hour. The company, however, offered only seventeen and a half cents. The strike was of short duration, and after being out for two or three days the majority of the men returned to work at the lower rate and the places of the others were filled.

BRITISH LABOUR NEWS

Co-Operative Societies.

At the end of 1912 there were at work in the United Kingdom 1,530 industrial co-operative distributive and productive societies, with an aggregate membership of 2,790,710, a total share, loan, and reserve capital of £56,413,411, a total trade (distributive and productive) of £145,156,060, and a total profit, before payment of interest on capital, of £13,234,201. The total number of persons directly employed by the societies was 134,303, and the total amount of wages paid during the year £7,913,820. This is a decrease on 1911 of 17 societies, but an increase of 110,989 in membership, £2,776,197 in capital, £8,765,557 in sales, and £308,499 in profit. While some of the societies are engaged only in distribution and some only in production, others are engaged in both distributive and productive operations. Of the total profit of £12,740,973, a sum of £11,958,064 was made by the retail societies, and £782,909 by the two wholesale societies. In the case of the retail societies, the greater part of the profit was distributed to the members as dividend upon purshases, at an average rate in the £ of 2s. 4½d. in England and Wales, 3s. 1d. in Scotland, and 1s. 3½d. in Ireland; the average for the United Kingdom being 2s. 5¾d. The English and the Scottish wholesale societies paid a dividend to members on purchases of 4d. and 8d. in the £ respectively.

Changes in Wages.

The total number of workpeople whose rates of wages were reported as being changed in the first six months of 1913 was 1,379,819 as compared with 753,415 in the corresponding period of 1912. Of this number all received net increases, with the exception of 3,500 workpeople, who had an upward and a downward change, which left their wages at the same level as at the beginning of the year. The net amount of increases was £117,513 per week, as compared with £39,544 per week in the corresponding period of 1912.

Changes in Hours.

The total number of workpeople reported as affected by changes in hours of labour in the first six months of 1913 was 57,393, the aggregate amount of the reduction being 127,059 hours per week.

Trade Disputes.

For the first six months of 1913 the number of trade disputes was 731, the number of workpeople affected was 357,843, and the aggregate duration of working days 5,149,100, as compared with 363, 1,260,461 and 37,444,200 respectively in the corresponding period of 1912.

Lead and Other Poisoning.

During the first six months of 1913 there were 465 cases and 37 deaths from lead and other poisoning and anthrax in factories and workshops as compared with 425 cases and 45 deaths in the corresponding period of 1912. There was also 135 cases and 21 deaths from lead poisoning among painters and plumbers as compared with 109 cases and 18 deaths in 1912.

Changes in Wages.

The total number of workpeople whose rates of wages were reported as being changed in the eleven months of 1913 was 1,681,669 as compared with 1,684,610 in the corresponding period of 1912. The changes arranged gave 1,669,653 workpeople a net increase of £149,224 per week and 11,951 a net decrease of £908 per week. The effect of all the changes was thus an increase of £148,316 per week as compared with one of £125,478 per week in the corresponding period of 1912.

Changes in Hours.

The total number of workpeople reported as affected by changes in hours of labour in the eleven months of 1913 was 98,752. Of these 7,621 had their hours increased by 4,783 per week and 91,131 had their hours decreased by 212,112 per week.

Trade Disputes.

For the eleven months of 1913 the trade disputes were 1,375, the number of workpeople affected was 648,682, and the aggregate duration of working days 10,562,100 as compared with 737, 1,408,266, and 40,139,400 respectively in the corresponding period of 1912.

Lead and Other Poisoning.

During the eleven months of 1913 there were 582 cases and 28 deaths from lead and other poisoning and anthrax in factories and workshops as compared with 586 cases and 44 deaths in the corresponding period of 1912. There were also 276 cases an 34 deaths from lead poisoning among painters and plumbers as compared with 234 cases and 42 deaths in the corresponding period of 1912.

GERMANY.

Trade Unions in 1911.

According to the current issue of the Statistical Year-Book of the German Empire, the total membership of trade unions in Germany at the end of 1911 was 3,791,665, as compared with 3,399,010 at the end of the preceding year, showing an increase of 11.6 per cent. Of the aggregate membership in 1911, 2,400,018 (or 63.3 per cent.) belonged to unions affiliated to the National Federation of Gewerkschaften, which are avowedly militant organizations, and are identified with the Social Democratic movement. Other national federations comprised in the above total are those of the "Christian" unions, with 350,574 members, and the "Hirsch-Duncker" unions, with 107,743 members. Of the unions not organized in national federations, but whose members are also comprised in the above total, those styled "independent" are numerically the strongest, having 763,925 members. The figures relating to the Social Democratic unions show for 1911 total receipts to the amount of £3,544,275, and expenditure of £2,951,233, and at the end of the year accummulated founds amounting to £3,053,536. In the case of the "Christian" unions these totals were respectively £306,979, £260,573, and £348,245, while in the case of the "Hirsch-Duncker" they were £128,975, £133,294, and £210,107. Upon payment of benefit to unemployed members (including allowances to those travelling in search of work) the Social Democratic unions spent £362,308, the "Christian" unions £9,109, and the "Hirsch-Duncker" unions £10,848. Under the head of strike pay and allowances in support of "victimized" members, the three federations recorded expenditures of £894,777, £58,980, and £16,352 respectively during the year.

APPENDIX.

Manufacturers.

Woodware: Capital employed, $83,784. Number of days in operation, 300. value of product, $72,000. Product increased about 12 per cent. Amount paid for taxes, $233. Insurance, $395. Amount for permanent repairs, $7,497. Other expenses, not including capital expenditure, taxes, insurance, wages or salaries, $29,185. Total number of employees, male, 42; female, 1. Total wages, $20,671. Total salaries to clerks, $1,950. Increase in wages, 10 per cent.

Machinery: Capital employed, $15,000. Number of days in operation, 305. Gross value of product, $20,000. Product increased about 20 per cent. Amount paid for taxes, $12. Insurance, $9,400. Amount for permanent repairs, $1,000. Total number of employees, male, 16. Total wages, male, $10,000. Increase in wages, 10 per cent.

Fur Manufacturer: Capital employed, $16,000. Number of days in operation, 270. Gross value of product, $39,000. Product increased about 10 per cent. Amount paid in taxes, $368. Insurance, $275. Total number of employees, male, 5; female, 5. Total wages, male, $4,425; female, $1,300. Total salaries to clerks, $475.

Brewery: Capital employed, $267,552. Number of days in operation, 312. Gross value of product, $95,026. Product increased. Amount paid in taxes, $1,194. Insurance, $978. Total number of employees, male, 30. Total wages, $16,699. Total salaries to clerks, $7,299. Increase in salaries 6 per cent.

Municipal Returns.

ADJALA, Tp.—Number of buildings erected, 11; cost $28,000. Amount expended on permanent improvements, $3,600. F. Kelly, Township Clerk, Loretto.

CAMBRIDGE, Tp.—Amount expended on permanent improvements, $7,387. J. B. Sanche, Township Clerk, Casselman.

Labour Organizations.

Name,—National Association of Marine Engineers, No. 1. Organized January 11, 1900; total membership, 50; average earnings per season, chiefs, $1,050 to $1,400; average earnings per month, seconds, $65 to $75; number of working hours, 12 hours per day during season of navigation; wages paid monthly; average number of days idle per member during year, two to four months; total number (union and non-union) employed at calling in locality, 50; all are members of organization; no difference between members and non-members; educational work for members during winter meetings. President, A. J. Fisher, Bathurst Street, Toronto; Corresponding Secretary, E. A. Prince, 817 Pape Ave., Toronto; meets every Friday during winter months.

BINDING SECT. AUG 25 1967